SpectraGen Z-Series™ Character Generator User's Manual

Texscan MSI

SpectraGen Z-Series™ Character Generator User's Manual

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SpectraGen User's Manual

The SpectraGen User's Manual includes chapters for Introduction, Installation, Operation, Keyboard Key Description and Appendices. The Introduction Chapter presents information pertaining to both Installation and Operation, such as "How to Use This Manual". The Installation Chapter gives connection and installation procedures. The Operation Chapter gives detailed instructions for operating and programming the SpectraGen. The Keyboard Key Description Chapter gives detailed introduction of the keyboard and a narrative of each key.

WARRANTY

Seller warrants that these goods were produced in compliance with all applicable requirements of the Fair Labor Standards Act of 1938. The seller warrants that these Goods are new, and unless otherwise specified, that they conform to the description on the sales order, and that each part of these Goods will be free from defects in both materials and workmanship under normal use and service. The Seller's obligations under this warranty shall be limited to repairing or replacing (F.O.B., Salt Lake City, Utah) each part of the Goods which do not conform to these standards provided the Buyer gives the Seller written notice of such non-compliance within a period of one year commencing with the delivery of the Goods to the Buyer.

The remedy set forth herein shall be the only remedy available to the Buyer for breach of this warranty, and in no event shall the Seller be liable for incidental or consequential damages for such breach. This warranty shall not apply to any part of the Goods, which without the fault of the Seller, has been subject to alteration, failure caused by a part not supplied by the Seller, accident, fire, or other negligence or misuse, or to any part of the Goods which fails as a result of normal wear and usage rather than as a result of the defect.

Warranty on vendor supplied items are those of the individual vendors and not the Seller. It is the Buyers obligation to contact third party vendors for warranty service.

Power-Out Disclaimer

SpectraGen character generators are microprocessor controlled systems. These systems may be affected by power abnormalities such as power line surges, spikes, static discharges, lightning strikes, or total power loss. These abnormalities may interfere with operation of the microprocessor and may result in loss of memory or cause erratic behavior. Each SpectraGen does have an internal (lithium cell) back-up battery, which provides memory loss protection from most power abnormalities.

Because of these potential threats to your system's operation, Texscan assumes no responsibility for memory loss caused by power abnormalities. We disclaim all responsibility for losses in advertising or other revenues or for business expenses resulting from power abnormalities.

We suggest that you minimize such losses by frequently backing-up memory data, using batch transfer to a PC, or another SpectraGen, so that if memory loss does occur, you will still have a record of the data. We also recommend that you install an uninterruptible power supply (UPS) or some other means of ensuring dependable and continuous power for your SpectraGen(s).

***** WARNING *****

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

IMPORTANT RULES FOR SAFE OPERATION

1. **Read Instructions** - All safety and operation instructions should be read before this product is operated.

2. **Retain Instructions** - The safety and operating instructions should be retained for future reference.

3. **Heed Warnings** - Adhere to all warnings on the product and in the Operation Chapter.

4. **Follow Instruction** - All operating and usage instructions should be followed.

5. **Cleaning** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6. **Accessories** - Do not use attachments not recommended by Texscan MSI as they may cause hazards.

   Do not place this product on an unstable cart, stand, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, bracket or table expected to be able to support four times the weight of this product. Any mounting of the product should follow instructions.

7. **Water and Moisture** - Do not use this product near water - for example, near a drinking fountain, sink, etc.

8. **Ventilation** - Openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the product on a rug, or other similar surface. This product should not be placed near or over a radiator or heat register. This product should not be

placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the instructions have been adhered to.

9. **Power Sources** - This product should be operated only from the type of power source indicated in this manual. If you are not sure of the type of power supplied to your business, consult your local power company.

10. **Grounding** - This product is equipped with a grounded polarized line plug. This is a safety feature. If the plug should fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

11. **Power-Cord Protection** - Power Supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

12. **Lightning** - For added protection of this product during a lightning storm or when it is left unattended and unused for long periods of time, unplug it from the wall outlet. This is the only way to prevent damage to the product due to lightning and power line surges. Power conditioning and/or surge suppressors are recommended for protection while the product is operating.

13. **Overloading** - Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

14. **Object and Liquid Entry** - Never push objects of any kind into this product through openings as they my touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the product.

15. **Servicing** - Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages or other hazards. Refer all servicing to qualified service personnel.

16. **Problems Requiring Service** - Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    a. When the power-supply cord or plug is damaged.

    b. If liquid has been spilled, or objects have fallen into the product.

    c. If the product has been exposed to rain or water.

    d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.

    e. If the product has been dropped or the cabinet has been damaged.

    f. When the product exhibits a distinct change in performance - this indicates a need for service.

17. **Replacement Parts** - When replacement parts are required, be sure the service technician has used replacement parts specified by Texscan MSI or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

18. **Safety Check** - Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in safe operating condition.

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Chapter 1
Introduction

How to Use This Manual

This manual contains user information and procedures for operating your SpectraGen Z-Series™. This manual contains information and procedures for all available options that may be included with your system. Your SpectraGen System includes several (perhaps all) of these options. The flexible SpectraGen System allows you to start with enough equipment to satisfy your minimum requirements. As your system needs increase, additional equipment may be added to build a more powerful system.

The key to learning how to use your SpectraGen System is to follow the procedures in the Operation Chapter 3 of this manual. Refer to the Quick Reference Guide (included with this manual) and applicable parts of Chapter 4 (Keyboard Key Descriptions) as needed.

In addition to this Operations chapter, you should read Chapter 2 Installation to ensure that your system has been properly installed.

What is a SpectraGen?

The SpectraGen Z-Series™ single channel video character generator is an effective tool that you can use to create, change, and display messages and other information, with high resolution characters, on one or more television (TV) screens. You design the video display pages from the SpectraGen keyboard which gives you access to color combinations, text line heights and widths, and text positioning. Operating your SpectraGen is sort-of like programming your VCR with simple on-screen menus to guide you through the process.

NOTE: *The term "SpectraGen" is used in this manual to refer to the SpectraGen Model Z-Series Video Character Generator.*

Special keyboard skills are not required! If you can "hunt and peck" on a keyboard - you can design and program video information for display by your SpectraGen. You have complete control over what the SpectraGen does. You control:

- What, why, how, where, and when video information is displayed.
- SpectraGen screen region sizes.
- Text message composition.
- Pages appearing in each region.
- Text flow onto the screen.
- Text dwell time.
- Layout, color, and character size.
- Interaction with external equipment.

After you have designed what, how and where, you can then instruct the SpectraGen when to display the video information; during any time period, for any duration and sequence for an entire week! The sequence will then automatically repeat - until you change the instructions. This is referred to as programming your SpectraGen.

What can you do with your SpectraGen?

1. Generate automatic text. With the SpectraGen you can divide the screen into independent display regions, then display in each region a sequence of pages taken from memory. These pages can contain:

   a. Local messages, advertisements and other operator designed material.

   b. A calendar and digital clock that automatically show the current day of the week, date and time.

   c. Local weather instrument readings (optional).

2. Display (OLMG) messages. The SpectraGen has a built-in Off-Line Message Generator (OLMG) which allows you to display pre-programmed messages.

3. External Keying. The SpectraGen can be used to superimpose titles on video received from an external source. Pages retrieved from memory contain the titles (that you designed and placed in memory). You can position the titles any place on the screen and can step automatically from one title to the next.

4. Remote Control. The SpectraGen can control and accept control from external equipment, such as the PB-1 and CSS-MINI, and can be used to program remote SpectraGen's or be programmed from remote SpectraGen's. The SpectraGen Z-Series is compatible with, and can be operated in networks that include, older model SGeB, SG3B and SG4B character generators.

SpectraGen Z-Series Display Features

- Page dwell time selectable from 1 to 98 seconds & continuous.
- Page display speeds selectable from fast, medium, or slow.
- Page display modes selectable from bang, splash, crawl, roll, or page print.
- Regional roll and hold.
- Character sizes by line or page: eight heights and eight widths.
- Character and background colors of word, line, or page selected from 32 combinations.
- Line separators with individual control over top and bottom separator colors.
- Character edging in three selectable sizes.
- Flash mode selectable for word, or line.
- Standard character face has upper and lower case characters, numerals, and keyboard graphic characters.
- A total of four different type faces with a choice of two displayed per line of text.
- Full color titling over external video on page, line or word basis.

SpectraGen Z-Series Software Features

- The key per function keyboard simplifies on-screen menus, eliminating the need for an operator to learn any programming language.
- Standard communication functions include keyboard direct, remote edit, and batch transfer with full access or restricted access using passwords.
- Operator selection of one of 10 internally stored telephone numbers toaccess standard communication functions with Texscan specified modems.
- Operator activated auto centering of text by line or page.
- Individual page insert timing up to one week in advance

SpectraGen Z-Series Hardware Features

- Full keyboard with remote operation using modems in a network.
- Battery Back-up; up to one year of memory retention without AC power. The internal (lithium cell) battery provides back-up power for all of the random access memory (RAM). This means that all the data you enter will still be there after a power failure.
- Pages may display automatically, or under manual control from the keyboard, or remotely via an external keyboard, or triggered (by line level) from external devices.
- Accepts externally mounted WeatherView local weather sensor system, model WX-4B.
- Full one-year warranty against defects in parts or workmanship; according to the terms of sale of the purchase agreement with the original buyer, FOB Salt Lake City.

SpectraGen Z-Series Specifications

Screen Display — High resolution screen. Display at 35 nanoseconds. Six independent display regions.

Text and Font — Characters are based on a 32 X 64 pixel matrix.

Video Input — 1 Volt p-p Source Video to BNC Connector, terminated in 75Ω. (NTSC)

Video Output — 1 Volt p-p on BNC Connector terminated in 75Ω. (NTSC)

Preview Output — 1 Volt p-p on BNC Connector terminated in 75Ω. (NTSC)

Parallel Ports — TTL compatible, programmable input or output.
Line 1 - dedicated to 4 lines output and 2 line input.
Line 2 - dedicated to PB-1, 14 VCR controller.
Line 3 - dedicated to CSS-MINI Plus, 2 VCR controller.

Serial Ports — Conform to RS 232 B specification. Programmable for batch transfer, keyboard, weather, BC News, Teletext type data (generic). 5 serial ports available.

Keyboards — Z-Series: Custom ASCII keyboards.

General Specifications

Dimensions	17-1/4" x 10-3/4" x 1-3/4".
Weight	Approximately 10 pounds.
Power	Approximately 10 watts, 90 to 270 volts AC, 50-60 Hz.

SpectraGen Z-Series Related Products

- Multiple font choices available from Z-Series font library. Contact your Texscan MSI sales representative for more information.
- CSS-MINIPLUS™ dual VCR Controller.
- PB-1 Multiple VCR Playback Controller.
- IMX-8 Multiplexer (RS-232).
- SpectraGen PC Edit System for Remote PC control and interface.
- WX-4B, WeatherView weather sensor system.
- Modem for telephone use. Texscan supports the following modems:

  1. Texscan MSI M1200 at 1200 baud.
  2. Cardinal MB2400BX at speeds of 2400 baud and below.
  3. UDS FasTalk V.32/42b at 9600 baud only.

  Other modems may work on the Z-Series Character Generators. If other modems are used, read the manual carefully and add any required 'AT' codes to the dialing telephone number. If incompatibility still exists, one of the above three modems must be used.

  Telephone numbers are set up in the Option Customer 'M' menu.

SpectraGen Z-Series Related Documents

- SpectraGen Z-Series User's Manual.
- CSS-MINIPLUS™ dual VCR Controller. Refer to System User's Manual.
- PB-1 Multiple VCR Playback Controller. Refer to Installation and Operation Manual.
- IMX-8 Multiplexer (RS-232). Refer to System User's Manual.
- SpectraGen PC Edit System for Remote PC control and interface. Refer to User's Manual.

Unpacking

Unpacking Instructions

Follow these steps when you receive your SpectraGen Z-Series System:

1. Before the driver leaves, check the shipment for missing boxes, and inspect each box for damage.
2. After the driver leaves, unpack the boxes and save all packing material.
3. Inspect the equipment for damage, both externally and internally. Don't judge the condition of the equipment by the external condi of the boxes - look inside each box.
4. If any equipment is damaged, call the shipper immediately (within 10 days) and file a damage claim.

5. If any equipment arrived damaged, call our Technical Service Department at (801) 359-0077 during normal business hours, 7:30 AM to 5:30 PM.

   After hours, technical support is available 7 days per week, including holidays, by calling **801-359-0108**.

Returning Equipment for Repair

Follow these steps to return equipment to Texscan MSI for repair:

1. Get a Material Authorization (RMA) Number. Call one of our Technical Service Engineers at (801) 359-0077. They will ask for your name, telephone number, company name, billing address, ship-to-address, equipment type, serial number, and problem description. When calling for a Material Authorization Number, ask your Technical Service Representative to suggest the best shipping method. You will also need a corporate Purchase Order Number for problems not covered under warranty.

2. Always return the equipment to us in its original packing material and boxes. <u>If equipment is not adequately protected, the carrier will not pay damage claims.</u>

3. Pack and ship the equipment. Carefully pack and securely tape all boxes.

4. Write the RMA Number on the outside of the shipping cartons and on the packing list. Also include a copy of the corporate purchase order (if this is not a warranty repair), and a written description of the problem. This is very important.

Help Procedures

This manual has been written to provide as much information as possible to assist you in using the SpectraGen Z-Series System and should answer most of your questions. However, should you come across an unusual problem or question with which you need further assistance, please call our Technical Service Department, from 7:30 AM to 5:30 PM Mountain time, at the following number:

(801) 359-0077

After hour technical support is available 7 days per week, including holidays, by calling:

801-359-0108

We also welcome your comments or suggestions. Please call or write, to the following address:

Texscan MSI Corporation
124 No. Charles Lindbergh Dr.
Salt Lake City, Utah 84116
(801) 359-0077

Chapter 2
Installation

Introduction

A typical SpectraGen wiring diagram is illustrated in Figure 2-1 using the Northgate Ultra-F keyboard (Part No. 5600022 or 5600024). Figure 2-2 illustrates use of the Northgate Ultra-T keyboard (Part No. 5600023). A brief description of the SpectraGen rear panel connectors are listed on page 2-4..

Figure 2-3 illustrates the SpectraGen Z-Series Keyboard (Z-KB) to Modem.

Figure 2-4 illustrates the SpectraGen Z-Series Keyboard Switch Setting.

Figure 2-5 illustrates a typical SpectraGen System followed by a narrative of those items which make up the system.

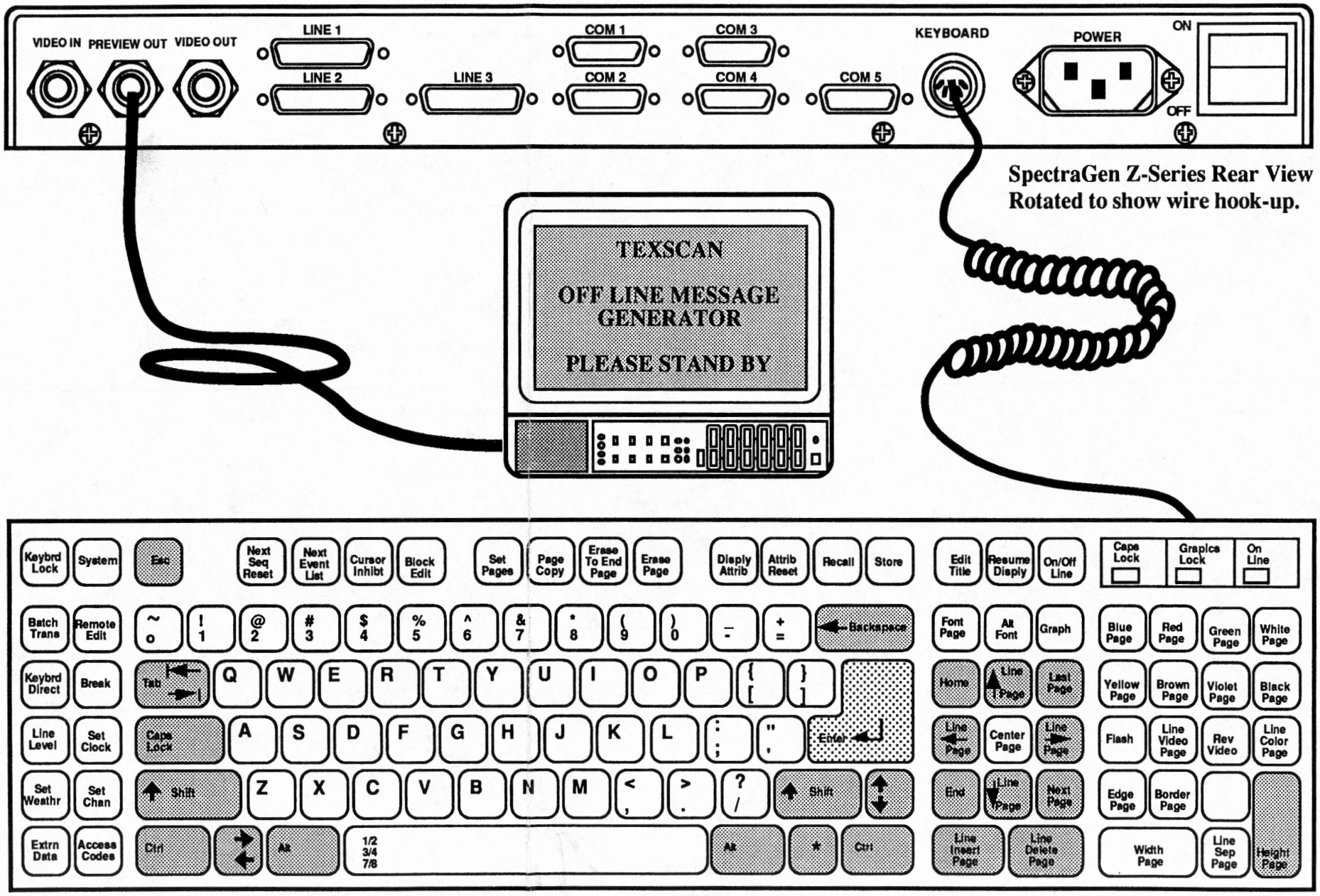


Figure 2-1. Typical SpectraGen Z-Series™ System Wiring Diagram.
(Using the Northgate Ultra-F Keyboard)

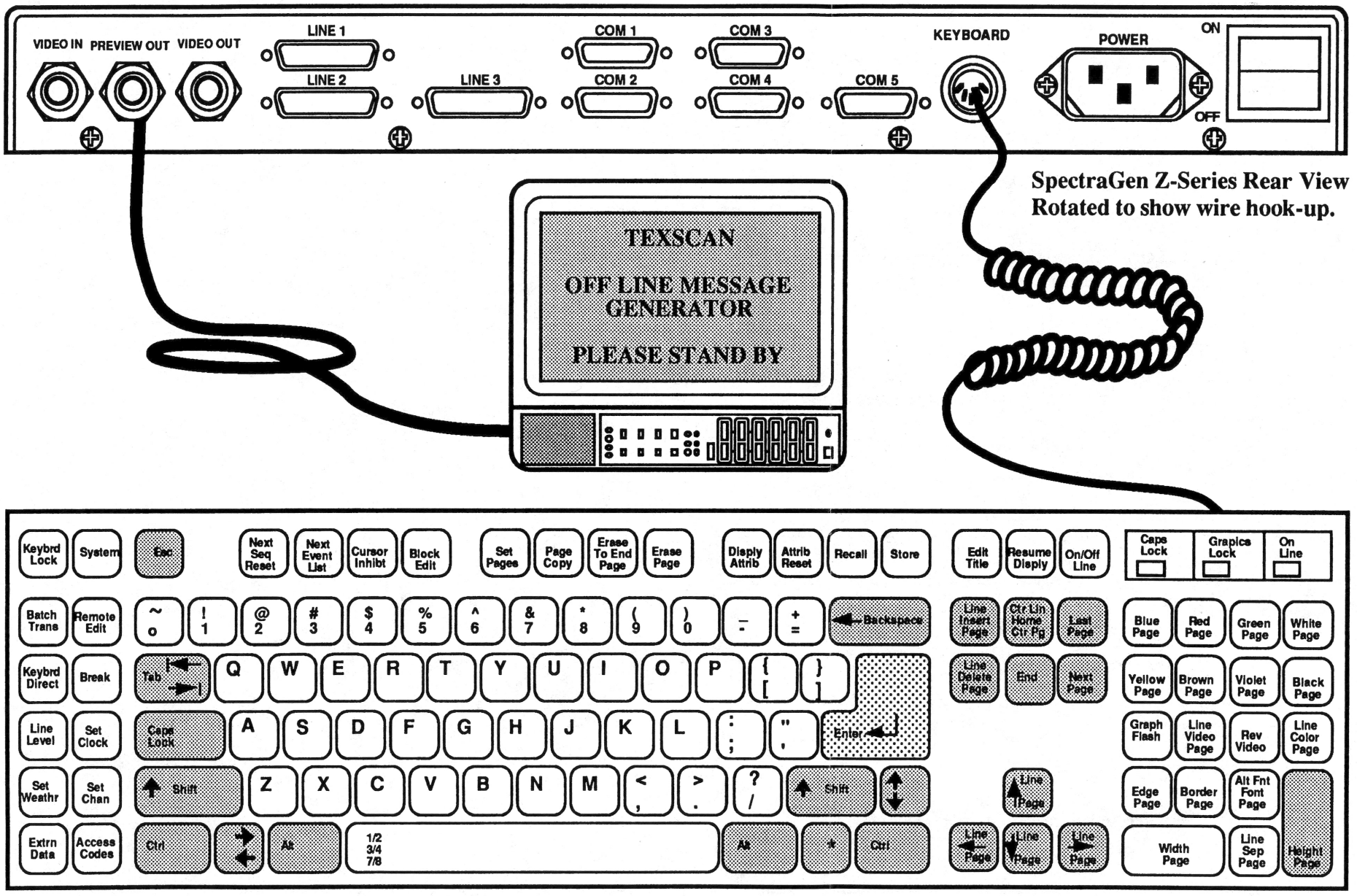


Figure 2-2. Typical SpectraGen Z-Series™ System Wiring Diagram. (With Northgate Ultra-T Keyboard)

SpectraGen Z-Series Rear Panel Connectors

- **VIDEO IN:** This BNC connector is for network or local video to be displayed by your SpectraGen System.
- **PREVIEW OUT:** This BNC connector provides video to your SpectraGen System Operators monitor.
- **VIDEO OUT:** This BNC connector provides the main program output video to be displayed by your SpectraGen distribution system.
- **LINE 1, LINE 2, and LINE 3:** These 15-pin type D subminiature connectors provide line level control signals for programmed operation of external devices in your SpectraGen System.

LINE 1	LINE LEVELS	OUT/IN
LINE 2	PB-1	INTERFACE
LINE 3	CSS-MINIPLUS	INTERFACE

LINE 1	**(LINE LEVEL)**
Pin 1	Line Level Out #1
Pin 2	Line Level Out #2
Pin 3	Line Level Out #3
Pin 4	Line Level Out #4
Pin 5	Line Level In #1
Pin 6	Line Level In #2
Pin 14 & 15	Gnd

NOTE: Other pins are connected internally for future use. **DO NOT** connect to any other pins on this connector.

PB1 and CSSMINI interconnect cables are available from Texscan MSI.

- **COM 1 thru COM 5:** These connectors provide programmable communications with external serial devices.

- **KEYBOARD:** This 5-pin DIN type connector provides the connection point for your SpectraGen keyboard.,

- **POWER:** This 3-pin connector allows convenient and safe connection of AC power to your SpectraGen.

NOTE *All video connections are 1 V P-P NTSC Video terminated at 75 ohms.*

Z-RK Remote Key Adapter

Z-RK to Modem

The SpectraGen Z-Series Remote Keyboard Adapter (Z-RK) provides a direct connection from a SpectraGen Keyboard (Z-KB) and a Texscan MSI approved modem. The modem provides a connection to a variety of systems. The simplest being one modem and one SpectraGen. The most complex could be multiple modems with individual telephone numbers, and each being connnected to a IMX-8 Multiplexer, with each of those connected to up to eight SpectraGen's.

Operation

With the system connected as shown in Figure 2-3, the operator enters the **AT** command strings desired.

For Example: To set the modem factory defaults, type **ATZ** and then press <ENTER>.

To tone dial a number connected to a modem and a SpectraGen, type **ATDT3590077**, and then press <ENTER>. Wait for the **CD** light to come ON. To enter additional data, simply type the SpectraGen commands, and the remote SpectraGen will respond. To hang-up, wait a few seconds and then type +++, then wait another few seconds and type **ATH** and then press <ENTER>

To control multiple SpectraGen's, review the Operation section in Chapter 3 under **SYSTEM Key**. To use other **AT** command strings, consult the provided Modem Operation Manual.

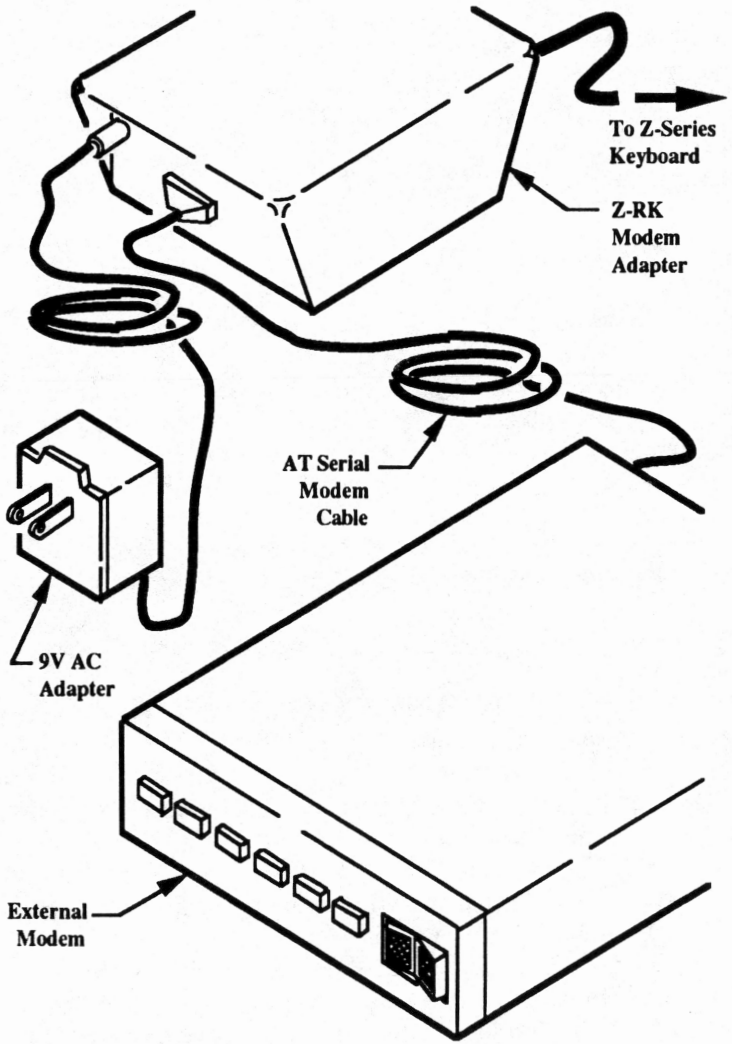


Figure 2-3. SpectraGen Keyboard (Z-KB) to Modem.

SpectraGen Z-Series Keyboard (Z-KB) Switch Setting

Located in the upper left hand corner of the Z-KB Keyboard, is an eight (8) position DIP Switch, which requires proper setting for certain applications. Refer to Figure 2-4.

When a particular switch is in the "up" position, it is ON; when it is in the "down" position, it is OFF.

If the switch at position 6 is ON, the baud rate will be 2400. If the switch at position 7 is ON, the baud rate will be 300. If both of these switches are OFF, the baud rate will be 9600, which is a standard keyboard baud rate.

If the switch at position 8 is ON, it forces CAPS LOCK to be active.

Refer to the following table for switch position and function.

SWITCH	POSITION	FUNCTION
SW 1	OFF	INVERT TTL OUTPUT*
SW 2	OFF	SG3/4 COMPATIBILITY*
SW 3	OFF	NOT USED
SW 4	OFF	NOT USED
SW 5	OFF	NOT USED
SW 6 SW 7		
OFF OFF		BAUD RATE 9600
OFF ON		BAUD RATE 300
ON OFF		BAUD RATE 2400
ON ON		NOT ALLOWED
SW 8	ON	CAPS LOCK is active
	OFF	CAPS LOCK is inactive

NOTE *DO NOT operate switches in any other combinations than shown above.*

* Both switches are required to be ON for SG3/4 compatibility.

NOTE *After each switch setting, the button to the left of the DIP Switch must be pressed in order to accept the new switch settings.*

Normally, remote keyboards are assigned to COM Port 3 on the SpectraGen Z-Series, and this default setting is baud rate 300.

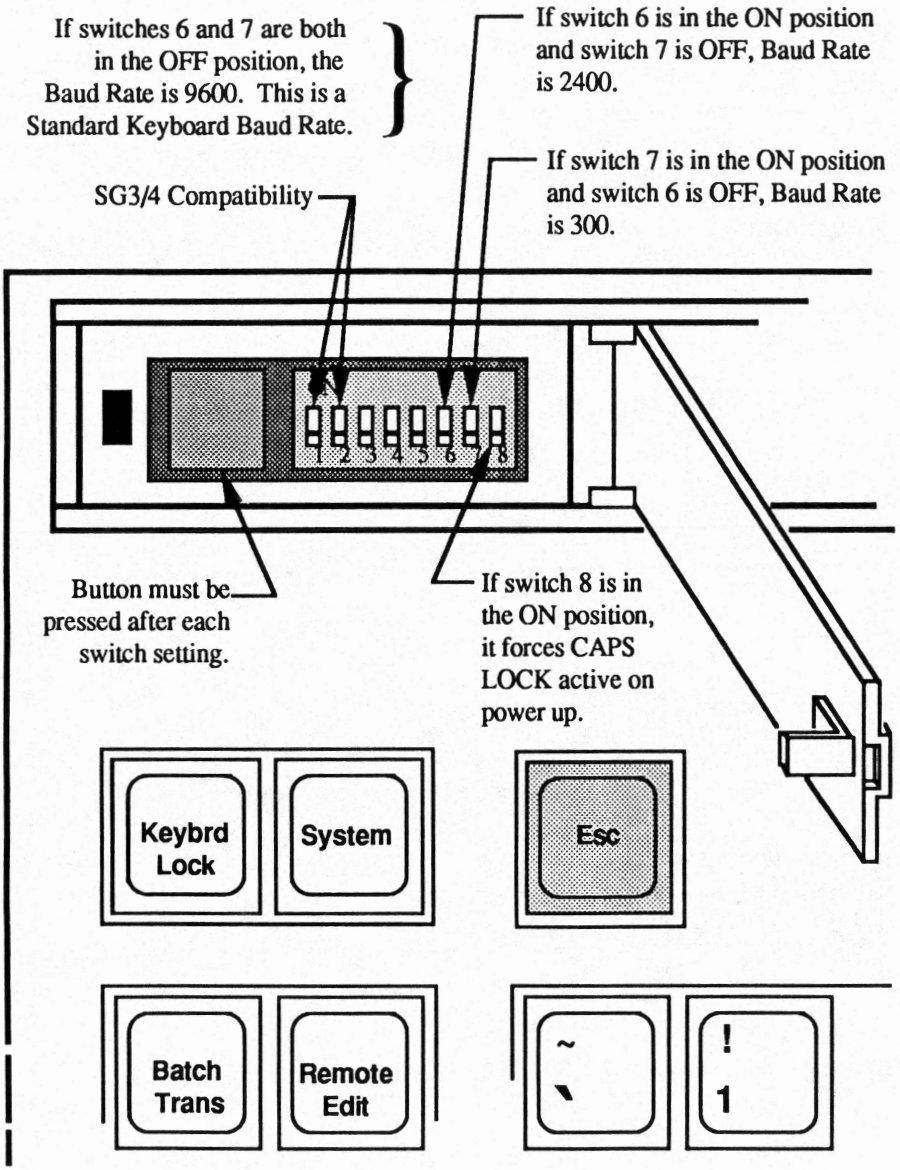

If switches 6 and 7 are both in the OFF position, the Baud Rate is 9600. This is a Standard Keyboard Baud Rate.
If switch 6 is in the ON position and switch 7 is OFF, Baud Rate is 2400.
If switch 7 is in the ON position and switch 6 is OFF, Baud Rate is 300.
SG3/4 Compatibility
1 2 3 4 5 6 7 8
Button must be pressed after each switch setting.
If switch 8 is in the ON position, it forces CAPS LOCK active on power up.
Keybrd Lock
System
Esc
Batch Trans
Remote Edit
~
`
!
1

Figure 2-4. SpectraGen Keyboard Switch Setting.

SpectraGen Z-Series Use in a System

A typical SpectraGen System or (network) is illustrated in Figure 2-5, along with brief descriptions of the major components on page 2-10.

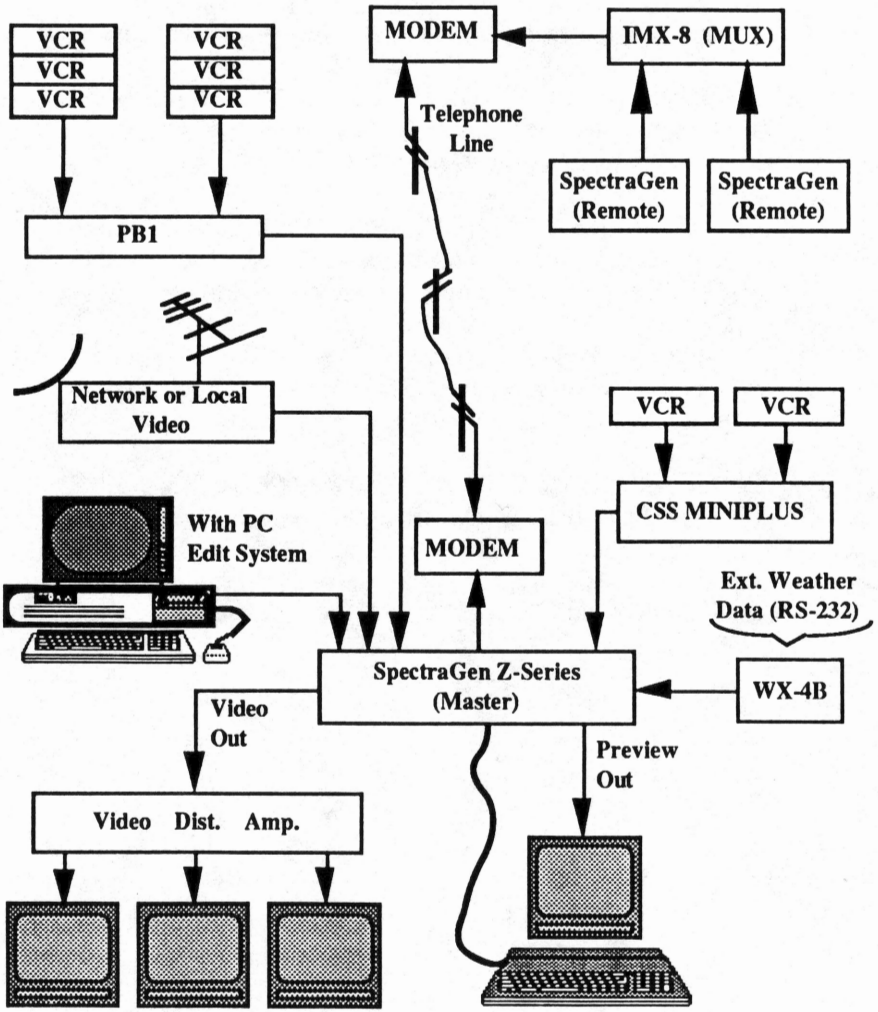


Figure 2-5. Typical SpectraGen System.

- **REMOTE SpectraGen OR OTHER SpectraGen's.** Several of these may be connected through a multiplexer at each location in your network. Each location is accessed over telephone lines through a modem.

- **MULTIPLEXER.** IMX-8 multiplexer may be used in your network. The use of a multiplexer allows several character generators to operate through a common modem at a remote site.

- **TAPE PLAYBACK CONTROLLER (PB-1).** Each PB-1 in your system can control the playback function for up to 14 VCR's, as programmed by the SpectraGen operator.

- **CSS-MINIPLUS™ TAPE CONTROLLER.** Each MINIPLUS in your system can control the playback and record functions for two VCR's as programmed by the SpectraGen operator.

- **WeatherView WEATHER SENSOR (WX-4B).** This unit interprets the weather information from local sensors, for display by your SpectraGen System.

- **PERSONAL COMPUTER (PC).** An IBM (or IBM compatible) PC, equipped with the SpectraGen PC Edit System, is used to text edit, and store text files used by Texscan MSI SpectraGen's. It also includes an "event" program and a program to convert standard DOS text to SpectraGen text.

Chapter 3
Operation

Introduction

SpectraGen controls and indicators are described in this chapter. Getting started and initial operation procedures are given, then a functional theory of operation is described under "How Does it Work?" A description of keyboard operation and a basic operating checklist are given, followed by a detailed operation example. Finally procedures for programming Customer Menu Options and Special Procedures are described.

Controls and Indicators

The SpectraGen front and rear panels are illustrated in Figure FO-2 in Appendix A. The cable connectors shown on the rear panel are described in Chapter 2 (SpectraGen Rear Panel Connectors). The remaining controls and indicators (ON/OFF power switch on the rear panel are red and green indicators on the front panel) are described as follows:

ON/OFF power switch/indicator

The ON/OFF power switch/indictor is located on the left side of the rear panel next to the POWER cord connector. Press the lower half of this rocker switch to turn the power OFF. Press the upper half of this rocker switch to turn the power ON. The red lamp in the switch rocker lights to indicate that power to the SpectraGen is ON.

Front panel red and green indicators

These red and green indicators are located on the right side of the front panel just to the left of the "Z" logo. The red indicator (BATT) flashes to indicate that a cold boot has occurred. The green indicator (POWER ON) flashes once per second to indicate that power to the SpectraGen is on., and the system is functioning properly.

NOTE *For Z-Series serial numbers whose last 4-digits start at 0500 and higher, a flashing red light indicates a low battery and memory will be lost when power is turned OFF.*

Getting Started

Review the following five step check-list to ensure that your SpectraGen is ready for initial operation.

1. Refer to Figure 2-1 and Figure 2-2 in Chapter 2 to see how the SpectraGen is connected for a basic operation.

2. **Turn on the video monitor and SpectraGen power.** The SpectraGen power switch is located on the rear panel next to the power cord connector. The red light on the power switch comes ON, and the small green light (POWER ON) on the front panel (close to the Z Series logo) flashes when the power is ON.

If the SpectraGen is producing a normal picture, such as a menu, a solid color screen, or one or more text messages, but there is no response when you press keys on the keyboard; your keyboard is inactive. Try step 2 and 3 on this check-list to return the keyboard to the active state:

NOTE *In the display mode, the entire keyboard (except EDIT, KEYBRD LOCK, and SEQ) is inactive during normal operation. This prevents un-wanted changes to SpectraGen operation. If you wish to enter the edit mode, press the EDIT key.*

3. **Check keyboard lock status.** When the keyboard is locked, the keyboard lights (CAPS LOCK, GRAPHICS LOCK, and ON LINE), will all flash in a random sequence. To unlock your keyboard - hold down the ALT key and press the KEYBRD LOCK key. To help locate keys on the keyboard, refer to the foldout keyboard illustration, Figure FO-1 in Appendix A.

4. **Check keyboard cable.** Ensure it is plugged in and not damaged.

5. **Check the Caps Lock status.** If the CAPS LOCK key function is in the locked state (CAPS LOCK light ON), all the keys in the alpha numeric group will produce only the uppercase character on the key (exception; see page 3-13). When the CAPS LOCK key function is in the unlocked state (CAPS LOCK light OFF) both uppercase and lowercase characters can be produced, depending on

the position of the SHIFT key. The CAPS LOCK key is located directly above the SHIFT key. To change the Caps Lock status, press CAPS LOCK key.

Initial Operation (for new users)

The following procedure tells how to create and display a few simple messages of your own design. By performing these steps you will gain a basic understanding of SpectraGen operating procedure. A more thorough operating procedure is presented later in this chapter.

NOTE *See also the SpectraGen Z-Series Quick Reference Guide included with this manual.*

When first turned on, your SpectraGen character generator will have four screen regions set-up: Title, Clock/calendar, Text messages, and Crawl messages. The following initial operation procedure shows you how to set the clock and write messages for a full-page text region.

1. Turn ON the SpectraGen and the video monitor. Allow several seconds for the automatic power-up tests to finish.

2. Press the EDIT key to put the SpectraGen in the edit mode. If the keyboard does not seem to work it may be because it is locked; keyboard lights (CAPS LOCK, GRAPHICS LOCK, and ON LINE) alternately flashing. To unlock the keyboard hold down the ALT key and press the KEYBRD LOCK key. Release the ALT key and then press EDIT.

3. If you want to set the clock, press the SET CLOCK key. This brings up the set clock menu on your monitor screen.

4. Set the clock by using the spacebar to change the entries and the <ENTER> key to jump from entry to entry. Do not change the page numbers at this time. Press <ENTER> until the menu goes away - clock is set.

5. Bring up the message:

   a. **Press the RECALL key.** This brings up a page number menu.

   b. **Type a page number.** This can be any number from 21 to 616, typically page 21. Remember this page number, you will need it in step 9. To make it easy to remember you may record the page number on your note pad.

   c. **Press the <ENTER> key.** This brings up the message page. If the page already has something on it, you may select another page by repeating steps a and b. On the message page, notice the small blinking rectangle on the monitor screen. This rectangle is the cursor position. The cursor position marks the spot where the message you type will start.

6. Type a message of your choice, or try "Hi! How are you?" Use the WIDTH and HEIGHT keys to change the character size, ENTER to end each text line, BACKSPACE to fix errors, and the color keys to choose background colors.

7. Press the DISPLY ATTRIB key. This brings up the display attributes menu. Step through this menu with the <ENTER> key. Follow the directions at the bottom of the screen to change features. Exit the menu by pressing <ENTER> repeatedly until the menu disappears.

8. Press STORE. This stores the contents of the page and brings up the page number menu. Press <ENTER> to save (or store) your message on the current page, or enter an alternate page number (then press <ENTER>) to store your message.

NOTE *You may create additional messages by repeating steps 5, 6, 7 and 8 for each message, then go to step 9.*

9. Tell the SpectraGen how to sequence your pages:

   a. Press the SEQ key to bring up the sequence menu.

b. Type the number of your message region (usually 3) and press the <ENTER> key to make the menu appear.

c. Type the number of your first page in FILE 1 START PAGE and press <ENTER>.

d. Type the number of your last page in FILE 1 STOP PAGE and press <ENTER>.

e. Type the number (quantity) of pages you created in FILE 1 CHANGE FILE.

f. Press the <ENTER> key repeatedly until the menu disappears.

10. Press the RESUME DISPLY key to make the SpectraGen enter the display mode and begin displaying your messages. Each of your pages will stay on the screen for about 15 seconds. To change this duration time and other attributes of each page, see the DISPLAY ATTRIB key description in Chapter 4.

How Does it Work?

There is a microprocessor inside the SpectraGen that has been designed to generate, remember and continuously display video information, for one TV channel, the way you want it displayed.

Modes of Operation

As shown in Figure 3-1 the SpectraGen has two modes of operation. In the edit mode, you use the keyboard and edit buffer to create pages, then tell the SpectraGen (with on-screen menu selections) how to display those pages.

In the display mode, a series of pages stored in the page memory are automatically called up and displayed according to the menus stored in the display processor.

You control which mode of operation is in effect at any given time from the keyboard. When you press EDIT, the SpectraGen enters the edit mode of operation; and when you press RESUME DISPLY the SpectraGen enters the display mode of operation. The following paragraphs explain the functions performed by each block in the block diagram as shown in Figure 3-1.

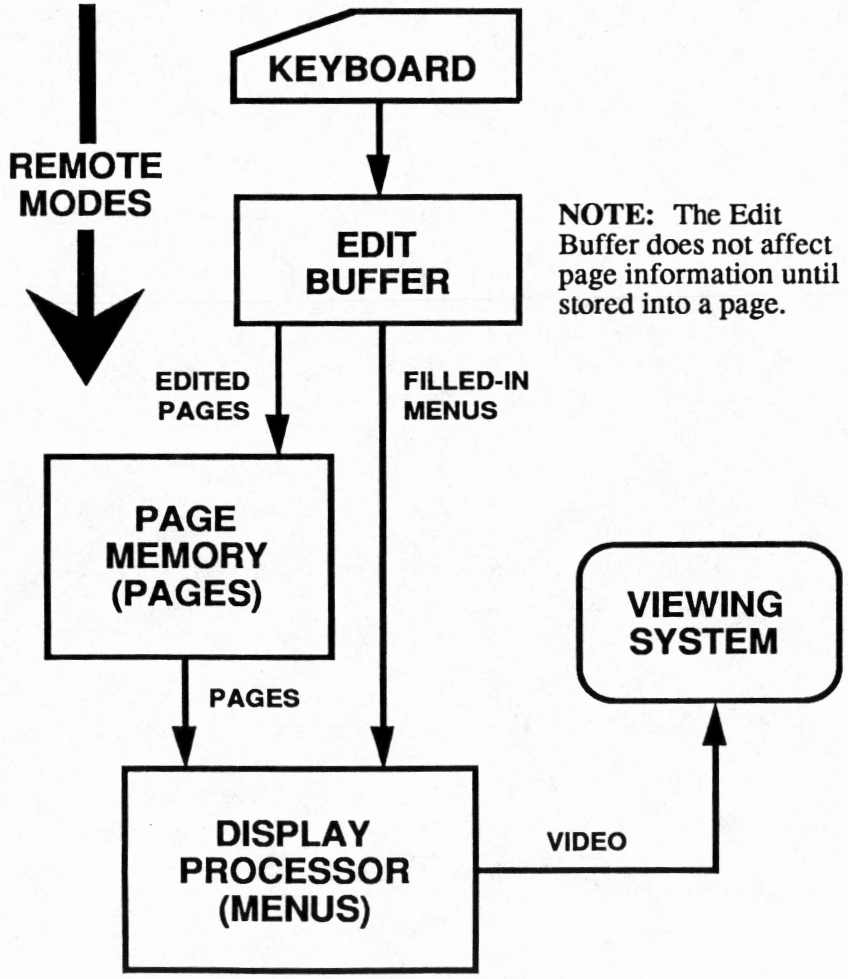


Figure 3-1. SpectraGen Functional Block Diagram.

NOTE *In the display mode, the entire keyboard (except EDIT, SEQ and KEYBRD LOCK) is inactive during normal operation. This prevents un-wanted changes to SpectraGen operation.*

Page Memory

The page memory stores pages entered at the keyboard and pages received from external sources (such as remote systems, news and weather wires). Each page stored in memory has a page number, a text block, and a attributes block. The page number identifies the page for both editing and display. The text block size always remains constant at eight 40-character text lines per page even though width and height may specify character sizes that prevent all 320 of these characters from fitting on the screen.

Individual pages longer than eight text lines can be created by linking (with the DISPLY ATTRIB key) two, or a maximum of three adjacent 8-text line memory pages into one page of 16 or 24 text lines. The larger linked page assumes the attributes of the first 8-line page of the linked set.

Display Processor

The display processor calls pages from the page memory in various sequences as specified by the sequence menus; it displays each page according to the attributes assigned to that page. The display processor also divides the screen into independent display regions and processes any news wire data according to the instructions entered in the system menus.

Keyboard

You use the keyboard to control all of the functions of the SpectraGen operation. The keyboard is used to select either edit mode or display mode operation, to create and edit pages, and to make menu selections. To help locate keys on the keyboard, refer to the keyboard illustration, Figure FO-1 in Appendix A.

Edit Buffer

The edit buffer allows you to see, one at a time, the pages you are creating and the menu items you are selecting. Pressing the EDIT key replaces the automatic page sequence output of the display processor with the contents of the edit buffer. Any page or menu in the edit buffer is temporary and does not become active until you copy (or store) it into the page memory or the display processor.

The edit buffer and the page memory communicate by copying pages. The STORE key copies the edit buffer page into any specified location in the page memory, while the RECALL key copies any page memory page into the edit buffer. The edit buffer page and the page memory page are identical immediately after a copy operation in either direction. A page in memory is changed by first copying it from the page memory into the edit buffer (RECALL), then changing the copy in the edit buffer, then finally copying the new edit buffer version back into page memory (STORE).

The edit buffer and display processor communicate by copying menus. Pressing the control key for a given function copies that function's current menu from the display processor into the edit buffer. Pressing the <ENTER> key until the menu disappears, after changing selections on the menu, copies the new edit buffer version back into the display processor.

NOTE *Remember, any page or menu in the edit buffer is temporary and not active, until you store it into the page memory or the display processor.*

The edit buffer can hold 26 40-character text lines. Single, double, and triple (linked) pages will fit entirely within the edit buffer, but may not necessarily show on the screen.

Operating Flowchart

The flowchart shown in Figure 3-2 illustrates how the SpectraGen powers up and operates in different modes. The paragraphs that follow discuss the operator control actions and describe the blocks on the chart in sequence.

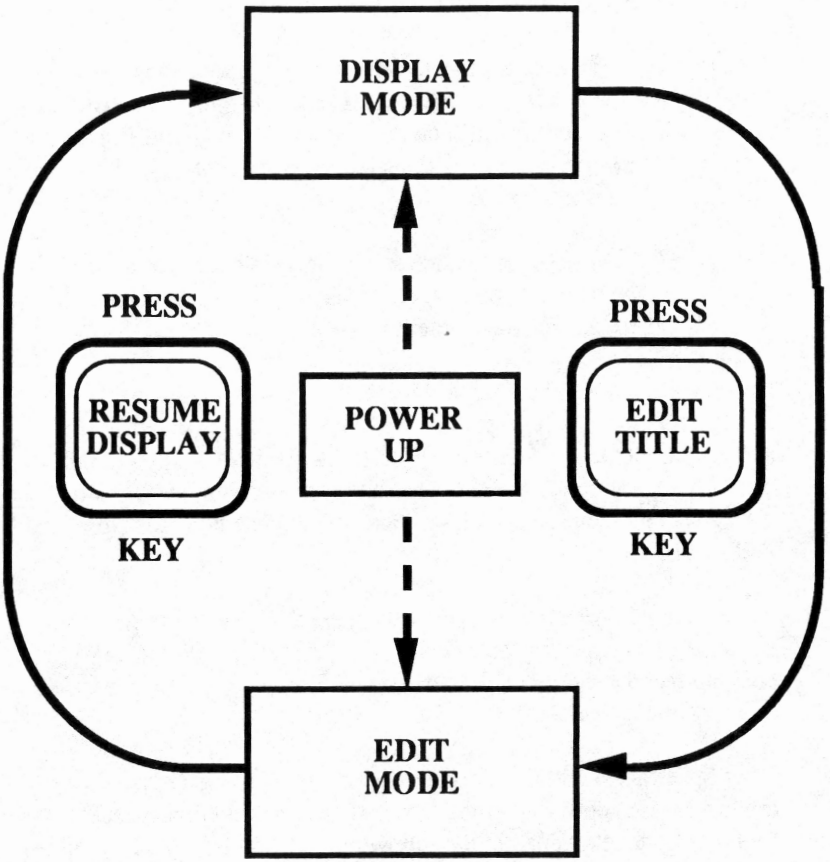


Figure 3-2. SpectraGen Operating Flowchart.

Power-up

Each time the power is turned ON, your SpectraGen microprocessor performs a short (less than four seconds) power-up boot procedure. This procedure is a short program that is internally stored by the microprocessor. The power-up boot causes your SpectraGen to start operation at the same point and in the same mode, either Edit or

Resume, that was in operation when the power was turned OFF. You can re-boot by turning the power OFF and then back ON

The initial (factory default) display created by a power-up boot (or re-boot) divides the screen into regions, assigns page attributes, displays a simple title, specifies how news wire data is processed, and sets a page display sequence. Basic instructions are stored beginning in page 138 during factory installation.

After you have entered some data and performed other operating procedures; the display created by a power-up boot (or re-boot) will reflect the data that you have entered.

Battery Back-up. The internal lithium cell provides back-up power for all the random access memory (RAM) in your SpectraGen. This means that all the data you enter will still be there after a power failure or re-boot. Therefore, when the power comes back on, or a re-boot is performed, all the pages you have created complete with all formatting will still be there.

NOTE *SpectraGen is designed for continuous operation. To obtain the longest possible back-up battery life, do not turn OFF your SpectraGen. The back-up battery is not being used when AC power is applied and your SpectraGen is turned ON.*

Your SpectraGen will be operating in the display mode or the edit mode when the power is turned ON. These operating modes (see Figure 3-2) are explained in the following paragraphs.

Display Mode

Press RESUME DISPLY to enter display mode. In display mode the SpectraGen provides video output according to the instructions you gave it from the edit mode. The SpectraGen will continue to operate in display mode until you press EDIT.

Edit Mode

Press EDIT to enter edit mode. In edit mode the SpectraGen output displays the current contents of the edit buffer on the monitor(s) connected to the preview output. If the edit buffer is empty, the monitor screen will be blue with a flashing white cursor. It does not supply text displays to customers in edit mode on the video output (except it may supply OLMG messages or Ext Video). In edit mode you may enter and change text or make changes to item selections from on-screen menus.

Keyboard Operation

To help locate keys, refer to the keyboard illustration Figure FO-1 in Appendix A. The SpectraGen keyboard is similar to many Personal Computer (PC) keyboards. At the center is a large group of (white and grey) alpha-numeric keys that are the same as a regular keyboard. There are several groups of keys arranged around this central group. These groups are described in the following paragraphs.

Function Select Keys

Several of the function control group keys perform two or three functions. Keys that have legends printed in black ink, perform their functions when pressed. No additional keys need to be held. However, keys with legends printed in red, blue or green require an additional "function select" key to be held down in order to perform the red, blue or green function. This action is similar to the shift key being held down in order to select an upper-case character.

There are three function select keys on the SpectraGen keyboard. They are located in the lower left (and right) corner of the alpha-numeric group. In addition to the (green) SHIFT key there is a (red) CTRL key (short for Control) and a (blue) ALT key (short for Alternate). One of these keys must be held down while a key, with the same color legend, is pressed in order to perform the indicated function. For example: If

you wish to perform an erase page function, you must hold down the (blue) ALT key while you press ERASE. The ERASE key is located in the top row of keys, near the center (See Figure FO-1 in Appendix A).

Alternate Action Function Control Keys

There are five alternate action functions that allow you to select (or toggle) between two states that affect the operation of the SpectraGen. The first two, KEYBRD LOCK and CURSOR INHIBIT, work in a different manner than the other three functions, CAPS LOCK, GRAPHICS LOCK, and ON/OFF Line. You control these functions as follows:

1. **KEYBRD LOCK (Keyboard Lock).** The keyboard is either unlocked, allowing full access to all functions of all keys, or the keyboard is locked, which makes the entire keyboard inactive A locked keyboard is indicated by flashing lights. All three of the keyboard indicator lights (CAPS LOCK, GRAPHICS LOCK, and ON LINE), randomly flash ON and OFF when the keyboard is locked. A locked keyboard will not respond to any keystrokes until changed to the unlocked state. This can be used to prevent accidental disruption.

NOTE *Each time you press KEYBRD LOCK, while holding down ALT, the function will toggle to the alternate state, locked or unlocked.*

   a. To lock your keyboard - hold down ALT and press KEYBRD LOCK. The KEYBRD LOCK key is located at the upper left corner of the keyboard. Remember, when the keyboard is locked, the lights will flash.

   b. To unlock your keyboard - hold down ALT and press KEYBRD LOCK.

2. **CURSOR INHIBIT.** The cursor is either active, appearing on screen and blinking, or the cursor is inhibited (not appearing on screen). When inhibited, the cursor is still there - you just can't see it! This cursor inhibit function is used with the titling feature of the SpectraGen; explained elsewhere in this manual. You can control the Cursor Inhibit function as follows:

NOTE *Each time you press the CURSOR INHIBIT key, while holding down the ALT key, the function will toggle to the alternate state, inhibited cursor or active cursor.*

a. To inhibit the cursor - hold down the ALT key and press the CURSOR INHIBIT key. The CURSOR INHIBIT key is the sixth key from the left on the top row of keys.

b. To activate the cursor - hold down the ALT key and press the CURSOR INHIBIT key.

NOTE *The following three keys, CAPS LOCK, GRAPH LOCK, and ON/OFF LINE are alternate action keys; the key function changes states (or toggles) each time you press the key; without holding the ALT or CTRL key. These three keys also have indicator lights (in the upper right corner of the keyboard) that light to indicate the locked or On Line function status.*

3. **Caps Lock.** The CAPS LOCK key is located directly above the SHIFT key. When the CAPS LOCK key function is in the locked state (CAPS LOCK light ON), all the keys in the alpha group will produce only the uppercase character on the key; however, if you hold down the SHIFT key, lowercase characters will be produced. When the CAPS LOCK key function is in the unlocked state (CAPS LOCK light OFF) both uppercase and lowercase characters can be produced, depending on the position of the SHIFT key.

NOTE *The CAPS LOCK affects the alpha keys A thru Z.*

4. **Graphics Key.** When the GRAPH key function is locked (GRAPHICS LOCK light ON), all the keys in the alpha-numeric group will produce only the graphic character for the key. When the GRAPH key function is unlocked (GRAPHICS LOCK light OFF), graphic characters can not be produced. The GRAPH key is located at the top right hand corner of the small group of keys to the right of the alpha-numeric group. The use of graphic characters is described in Appendix B and illustrated in Figures B-1 thru B-5.

5. **ON/OFF Line.** The ON/OFF Line key function is used only when your SpectraGen is operating in the genlock mode. The Title mode is described under Special Function Procedures later in this chapter. The ON/OFF Line key is that last key on the right end of the top row of keys.

Cursor Position Keys

There are six cursor position keys (gray) in the small group just to the right of the alpha-numeric group. These are: HOME, END, and arrow keys UP, DOWN, LEFT and RIGHT. Press the HOME key to position the cursor at the upper left corner of the monitor screen. Press the END key to move the cursor to the end of the next line. Press one of the arrow keys to move the cursor one character space in the direction of the arrow. The TAB key (gray) is also a position key and is located on the left of the alpha-numeric keys. Press the TAB key to advance five spaces. Back tab (SHIFT + TAB) is also used to go backward five spaces. The SPACEBAR, the long key located at the bottom of the alpha-numeric group, when used by itself advances the cursor one whole space, and erases the character it is on. When the SPACEBAR is used with the CTRL key held down, the cursor will advance a 1/2 space; when used with the SHIFT key held down, the cursor will advance a 3/4 space; and when used with the ALT key held down, the cursor will advance a 7/8 space.

Basic Operating Checklist

The following basic steps are necessary to operate your SpectraGen:

1. Plan your message and how you want to display it.

2. **Getting set-up.** The main part of this is defining the number of display lines in each screen region. Naming your unit (if part of a network), and setting the clock are also part of getting set-up.

NOTE *There is a difference between display lines and text lines; please refer to the explanation of these terms in the Glossary.*

3. **Compose pages.** This involves writing (or entering from prepared copy) the actual messages, and storing them in memory with formatting instructions, defining the size, colors, borders, and other presentation attributes for each part of the message. (See EDIT in Appendix G.)

4. **Sequence pages.** This determines what messages will appear, in an order that you specify, in each region of the display. (See SEQ and FILE, CHANGE FILE in Appendix G.)

5. **Resume display mode operation.** This instructs the SpectraGen to display your messages on all of the monitors or TV's in your distribution network. (See DISPLY ATTRIB in Appendix G.)

NOTE *Observe that steps 2, 3, and 4 of the preceding checklist are performed in the edit mode, and step 5 resumes the display mode. For an easy reminder of the basic operating procedures, see the SpectraGen Quick Reference Guide included with this manual.*

Weekly/Daily Operation Example.

The following example is given to help you understand the procedures that have been given. The example follows the basic checklist, and includes comments to help you understand how the SpectraGen works.

Assume that your SpectraGen has just been installed and is now connected, turned ON and waiting for you to compose, program and display your first message. If this is a new system from the factory, it will be operating in the display mode and a screen like the one shown in Figure 3-3 should appear on your video monitor.

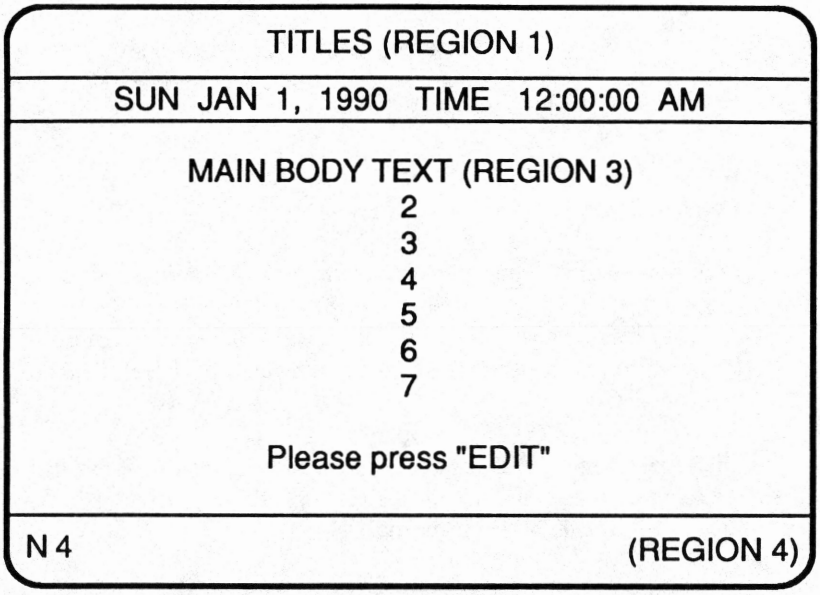


Figure 3-3. Initial New System Start-up Screen Display.

To help locate keys on the keyboard, refer to the keyboard illustration Figure FO-1 in Appendix A. To enter the edit mode press the EDIT key (located on the top row of keys above the alpha-numeric group, the third key from the right). This will access the edit buffer and display the last screen displayed prior to power down. If no reaction on the screen occurs as a result of pressing the EDIT key, your keyboard may be locked.

In the edit mode the cursor should be flashing on the monitor screen. If so, the Cursor Inhibit function is inactive and you may continue. If there is no indication of a cursor anywhere on the screen, press the

HOME key. If the cursor still does not appear, hold the ALT key and press the CURSOR INHIBIT key. The cursor should now be on screen. The CURSOR INHIBIT key is the sixth one from the left on the top row of keys.

To continue the example according to the basic operating checklist, perform the steps in the following paragraphs.

Plan your message and how to display it

Suppose that your SpectraGen is installed in a resort hotel; and that your messages are to be displayed on a special channel that is connected to TV sets in 400 rooms. You could be the social director for the hotel.

For this example lets set up four regions for display on the screen. One for the hotel name (Title); one for the day and date and time of day (Digital Clock); one for the main text message; and one for a bulletin line (crawl) message.

Getting Set-up

To get set-up do the following:

1. If not already in the edit mode; press the EDIT key to enter the edit mode. To help locate keys on the keyboard, refer to the keyboard illustration Figure FO-1 in Appendix A.

NOTE *When operating in the edit mode, there will be a text screen or a menu screen on the monitor. Should a menu be present, be sure to save whatever choices you have entered by pressing the <ENTER> key repeatedly until you have exited the menu. If you were in the Display Page Attributes menu or edit, you must store the text page after pressing <ENTER> until the menu disappears, by pressing the STORE key in order to save your choices and then press <ENTER>.*

2. Press the SET CHAN key to display the Set Channel menu on your monitor. When first displayed the cursor will be at the CHANNEL NAME field on this menu (see Figure 3-4). If your SpectraGen is the only one in the system, naming it is not necessary. Should the unit be one of two or more in an interconnected system (network), it will need to be named with a one or two digit alpha-numeric designation to permit remote access to (or from) other units in the system.

NOTE *It makes sense to use a simple identifier (CHANNEL NAME) for ease of recall. For example: RE (restaurant) would connect to RS (room service), FD (front desk), HK (housekeeping), and SP (swimming pool).*

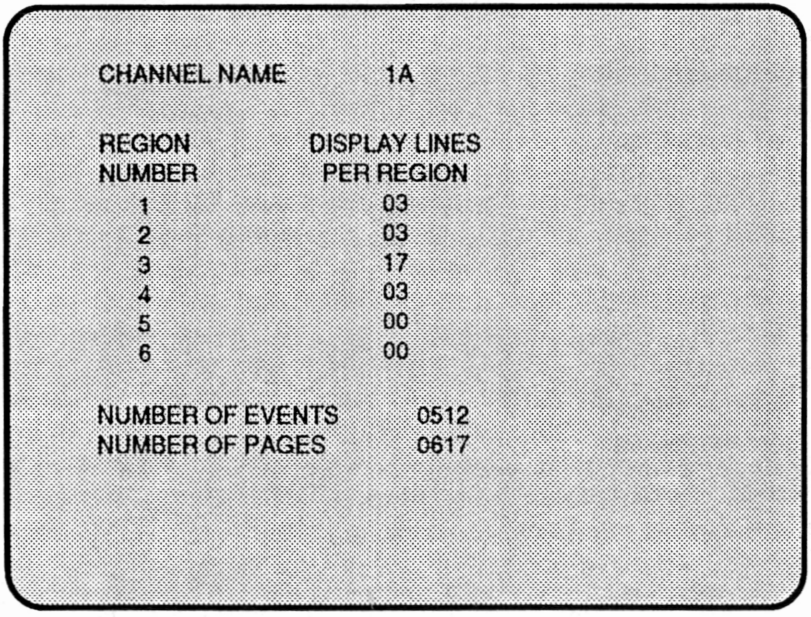


Figure 3-4. Set Channel Menu.

Once the name is set, it is not necessary to rename the unit each time you enter the Set Channel menu or after a power failure. The internal power cell maintains memory. Next you need to set up the number of display lines for each screen region as follows:

1. Press <ENTER> to move the cursor to the next field which is REGION NUMBER 1 under the DISPLAY LINES PER REGION column. Type the number 3 in this field to make region number one 3 display lines high. In this region you will display the name of the hotel.

NOTE *There are 26 display lines per screen. The total number of lines in the menu column "Display Lines Per Region" must equal 26.*

2. Press <ENTER> to move the cursor to the next field which is REGION NUMBER 2 under the DISPLAY LINES PER REGION column. Type the number 3 in this field to make region two 3 display lines high. In this region you will display the calendar and clock information.

NOTE *If you type numbers or letters that are outside the defined range for that data field, the SpectraGen either will not accept them or will flash them after you press <ENTER>.*

3. Press <ENTER> to move the cursor to the next field which is REGION NUMBER 3 under the DISPLAY LINES PER REGION column. Type the number 17 in this field to make region three 17 display lines high. In this region you will display your main text message.

4. Press <ENTER> to move the cursor to the next field which is REGION NUMBER 4 under the DISPLAY LINES PER REGION column. Type the number 3 in this field to make region four 3 display lines high. In this region you will display your crawl message.

5. Press <ENTER> several times to move the cursor until you are out of the menu. This will store the menu and return you to the edit screen.

In general, when you press <ENTER> at the last entry point on a menu, three things happen. First, the information at the last point is accepted; second, the entire menu is stored in the display processor and becomes effective; and third, the page that was previously in the edit buffer returns to the screen. Until you press <ENTER> this last time, the new version of the menu exists only in the edit buffer. You will lose the new version if you press the EDIT key or any function key (or if there is a power failure) before you save the menu. However, the menu in its original form will continue to be in effect in the display processor.

The SpectraGen must be operating in the edit mode in order to call-up a menu. To call-up a menu, press the appropriate function key. Most of the function keys are in the group of ten keys just to the left of the alpha-numeric group. In general the menus operate by placing the cursor over a variable information item on a menu. You then have the option of changing that information item by typing the new information (typically just one or two characters), or pressing the <ENTER> key to leave that information as is and move the cursor to the next variable on the menu. After typing new information, press the <ENTER> key to move to the next variable. Each time you press <ENTER> the Spectra-Gen accepts the information and moves the cursor to the next entry point.

If you wish to review a current menu; from the edit mode, press the menu's function key to copy it into the edit buffer and display it on your monitor screen. After reviewing the menu press the EDIT key to display the page that was previously in the edit buffer.

Menu Error Correction

If you make an error on a menu, it can be corrected. The way you correct a menu error depends on when you noticed the error as follows:

- Error noticed before pressing <ENTER>. Just retype the correct information. The correct information will replace the incorrect information. If the entry field requires blanks, press the zero key.

- Error noticed after pressing <ENTER>. An out-of-limits entry will start to flash after you press <ENTER>. If this happens, type the correct information, then press <ENTER>. If the entry is in limits but wrong, follow the steps below.

NOTE *The cursor will not move backwards through a menu. Press the <ENTER> key to move the cursor to the next field in a menu.*

- Error noticed after storing the menu. Changes can be made to a menu with the following procedure.

1. Press the <ENTER> key repeatedly to step through the menu to the point that you wish to change.
2. Type the new information.
3. Press <ENTER> one time to store the new information.
4. Press the <ENTER> key repeatedly to step through the remaining fields to the end of the menu.
5. Finally, press <ENTER> one last time to store the menu and display the page that was previously in the edit buffer.

Set The Clock

You have now defined the regions and are ready to set the time and date and store this information in the SpectraGen page memory as follows:

NOTE *If the clock has already been set, you may skip ahead to composing pages.*

1. Press SET CLOCK to bring up the Set Clock menu. The SET CLOCK key is located in the center of the column of keys directly to the left of the alpha-numeric group. The SET CLOCK menu (see Figure 3-5 will appear on your monitor. The cursor will first appear at the DAY field on this menu. The next steps are sort of like setting a digital watch.

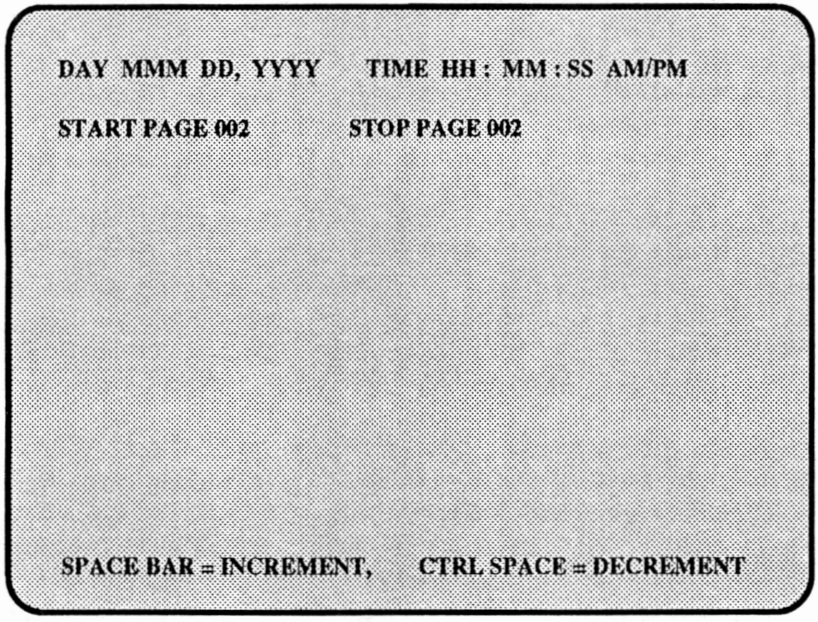


Figure 3-5. Set Clock Menu.

2. Set the day of the week (DAY) by repeatedly pressing the spacebar (the long key at the bottom) to step through the days until the current day appears. If you bypass the desired day, hold the CTRL key down and press the spacebar until the correct day is selected. Then, press <ENTER> to store the current day and move the cursor to the month field (MMM).

3. To set the month (MMM), press the spacebar repeatedly until the current month appears. Then, press the <ENTER> to store the current month and move the cursor to the day of the month field (DD).

4. To set the day of the month (DD), press the spacebar repeatedly until the current day of the month appears. Then, press <ENTER> to store the current day of the month and move the cursor to the year field (YYYY).

5. Set the year (YYYY) by pressing the spacebar repeatedly until the current year appears. Then, press <ENTER> to store the current year and move the cursor to the hour field (HH).

6. To set the hour (HH), press the spacebar repeatedly until the current hour appears. Then, press <ENTER> to store the current hour and move the cursor to the minute field (MM).

NOTE *The following steps (7 through 11) provide a method of synchronizing your SpectraGen clock with a local time standard.*

7. Set the minute (MM) by pressing the spacebar repeatedly until the current minute plus one minute appears. For example: If the current minute is 53, set the clock to 54. Then, press <ENTER> to store the current minute and move the cursor to the second field (SS). Observe that the clock is not actually started until step 11.

8. Press the spacebar repeatedly until the current second read 00. Then, press <ENTER> to store the current second and move the cursor to the anti/post meridian field (A/PM).

9. Press the spacebar until the AM or PM (before or after noon, whichever is current) appears. Then, press <ENTER> to store AM or PM and move the START PAGE XXX field.

NOTE *Do not assign clock data to page zero. The clock data will not display if assigned to page zero.*

11. At the STOP PAGE XXX field, type 2, to store the time on page 002 which is the STOP PAGE as well as the START PAGE, then wait until the current time reaches the one-minute ahead time of 54 that you stored in Step 7 and then press <ENTER>. This will start the clock, store the STOP PAGE 002, store the SET CLOCK menu, and return you to the edit page.

NOTE *If you need to re-set the clock, press SET CLOCK (in edit mode) and repeat the steps of this procedure, as needed. Be aware that the height and width of the characters will determine whether the entire display can be shown on the screen. The page attributes of the start page through the stop page set the display attributes of the clock display located on those pages.*

Most often, the date and time are displayed in only one region, although you may choose to display the clock in any region (or several regions). However, only one page of memory is needed to store the date and time information.

Composing Pages

You have now completed planning your message(s) and setting-up (including setting the clock, if necessary); the next step is to compose pages. This involves writing (or entering from prepared copy) the actual messages, and storing them in SpectraGen memory; along with the instructions that define the size, colors, borders, and other formatting attributes for each part of the message. Refer to the example in Figure 3-6; then, make a copy of the foldout worksheet, Figure FO-3 in Appendix A, or use a note pad to help you lay out the regions which you would like to display. Region 1 is the area at the top of the screen, the other regions follow to the bottom of the screen.

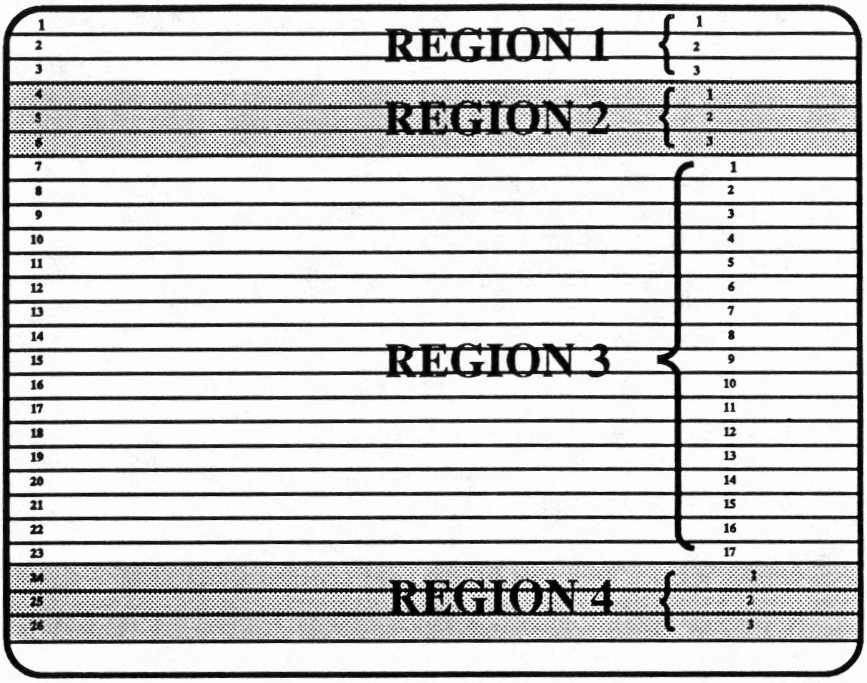


Figure 3-6. Screen Design Example.

- Points to remember -

- There are 26 display lines on the screen, none of which may be deleted.
- From 1 to 6 regions may be designated.
- No more than 8 lines of text per page will display, no matter how large or small the characters, or how many text lines have been typed (unless pages have been linked).
- The area above the top text line and below the bottom text line are unusable.

To help locate keys on the keyboard, refer to the keyboard illustration, Figure FO-1 in Appendix A. See the key descriptions in Chapter 4 for detailed information about each key. The following paragraphs explain how to write, format and move pages.

You write and edit pages with the following keys: The alpha-numeric group, the cursor control group (HOME, LAST PAGE, NEXT PAGE and arrow keys UP, DOWN, LEFT, RIGHT), text erasure keys (BACKSPACE, DELETE, ERASE TO END, ERASE), the text INSERT key, and the text Ctr Ln/Ctr Pg key.

NOTE *Chapter 4 provides more information about how to use the keys mentioned in the following paragraphs.*

If you have external data sources, tell them how to write pages for you; with the EXTRN DATA key for newswires, or the SET WEATHR key for weather information.

You format or set up the visual appearance of the pages with the color keys (BLUE, RED, GREEN, WHITE, YELLOW, BROWN, VIOLET, and BLACK); the REV VIDEO key; the type style and size keys (FONT, ALT FONT, EDGE, BORDER, WIDTH and HEIGHT); and the graphics keys (GRAPH and LINE SEP).

You determine the display presentation for each page by controlling how the text moves onto the screen (bang, crawl, page print, roll, or splash), how fast it moves onto the screen (slow, medium, or fast) and how long it stays on the screen (display time) by setting these attributes in the page's display attribute menu. Use the DISPLY ATTRIB key to call up the display attributes menu for the page currently in the edit buffer. Use the ATTRIB RESET key to set all the attributes in this menu to their standard default values as shown in Figure 3-7.

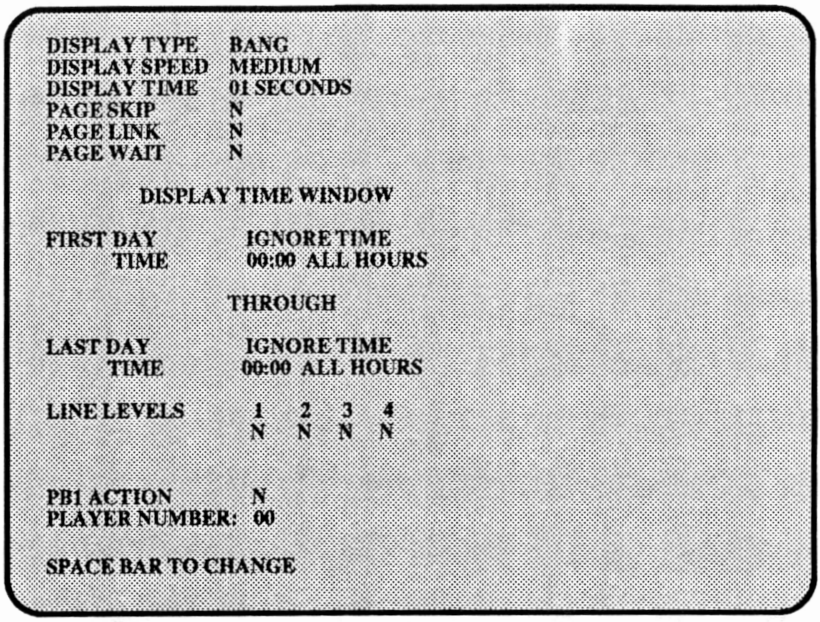


Figure 3-7. Display Attributes Menu.

You can move pages back and forth between the edit buffer and memory with the page move keys. Specifically, you can recall and store specific pages by number with the RECALL and STORE keys, call pages sequentially from memory with the LAST PAGE and NEXT PAGE keys, copy an edit buffer page into a block of pages in memory with the SET PAGES key, or copy a block of memory pages into another location in memory with the PAGE COPY key. For more information about these keys, read keyboard description, in Chapter 4.

CAUTION

Incorrect use of these keys (STORE, SET PAGES, PAGE COPY) may cause pages to be lost. Before using these keys, read the corresponding key descriptions in Chapter 4.

Write and Format Pages

To write and format pages for the resort hotel example as shown in Figure 3-8, proceed as follows:

1. As you create and store pages in SpectraGen memory, make a list of what is on each of these pages. Call this list a "Planning List" or a "Memory Page List". This list will be very useful as you create more pages, and you can refer to it during the page sequencing procedure.

MEMORY PAGE LIST
(SpectraGen Worksheet)

PAGE	REGION	CONTENTS	NOTES
1	1	- RESORT HOTEL -	Red
2	2	DAY - DATE - CLOCK	Blue
21	3	WELCOME Delegates	Bang
22	3	This Weeks Events	Roll
23	3	MONDAY (Schedule)	Splash
24	3	TUESDAY (Schedule)	Pg Pnt
25	3	WEDNESDAY (Schedule)	Splash
26	3	THURSDAY (Schedule)	Pg Pnt
27	3	FRIDAY (Schedule)	Splash
28	4	Pool Party @ 4:00	Crawl

Figure 3-8. Sample of Memory Page List.

2. Press EDIT, recall page 1 and press <ENTER>. Hold the ALT key down and press the ERASE key to erase the page. Type **"RESORT HOTEL"**; adjust the height and width; hold down the ALT key and press Ctr Pg. Press several color keys to find a pleasing background color. Press DISPLY ATTRIB to bring up the display attributes menu; select BANG, MEDIUM, and 40 SEC ONDS, then exit the menu by pressing <ENTER> several times.

NOTE *When one page is only being used, the time setting in DISPLAY TIME doesn't matter.*

3. Press STORE and then press <ENTER> to store the page. Recall page 2 and press <ENTER> to verify the contents of page 2. If necessary set the clock and store it on page 2. The PAGE ATTR should be set to BANG and 01 Second.

NOTE *The clock display will center automatically.*

4. Recall page 21 and press <ENTER>. Hold the ALT key down and press the ERASE key to erase the page. Type "- WELCOME Delegates -" as shown in Figure 3-9. Hold down the ALT key and press the Ctr Pg key, adjust the height and width, and select a pleasing background color (should be different than the clock page color). Press DISPLY ATTRIB; select BANG, MEDIUM, and 05 SECONDS, then exit the menu. Press the STORE key and then <ENTER> to store the page. To verify the page press RECALL and then <ENTER>.

Figure 3-9. Welcome Delegates Screen Display.

5. Recall page 22 and press <ENTER>. Hold the ALT key down and press the ERASE key to erase the page. Type the text (This Weeks Events) as shown in Figure 3-10. Adjust the height and width, and select a pleasing background color (different from the preceding page color). Press DISPLY ATTRIB to bring up the display attributes menu; select ROLL, FAST, and 10 SECONDS, then exit the menu. Press the STORE key and then <ENTER> to store the page. To verify the page press RECALL and then <ENTER>.

NOTE *Remember that there are only 8 data lines which appear on the screen.*

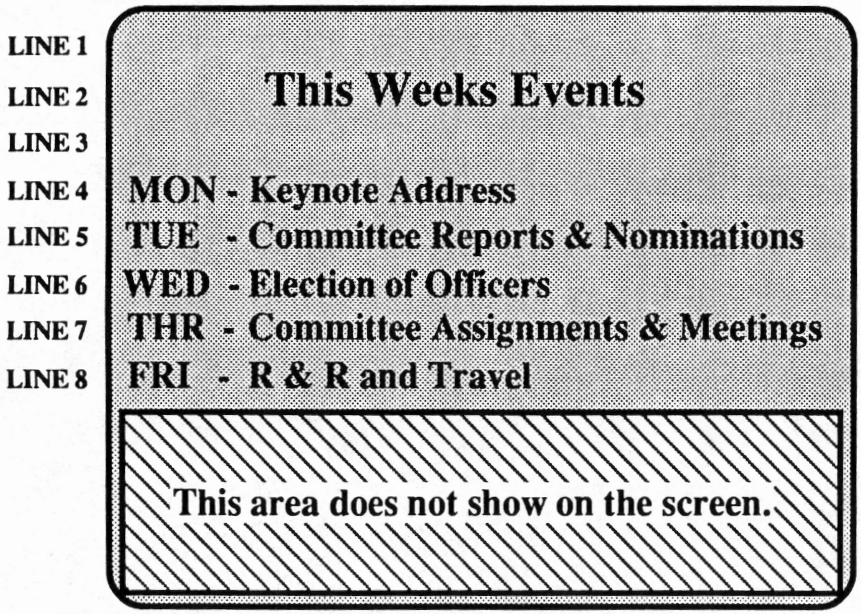


Figure 3-10. This Weeks Events Screen Display.

6. Recall page 23 and press <ENTER>. Hold the ALT key down and press the ERASE key to erase the page. Type the text (MONDAY) as shown in Figure 3-11. Adjust the height and width, and select a pleasing background color (different than the preceding page color). Press DISPLY ATTRIB to bring up the display attributes menu; select SPLASH, MEDIUM, and 05 SECONDS, then exit the menu. Press the STORE key and then <ENTER> to store the page. To verify the page press RECALL and then press <ENTER>.

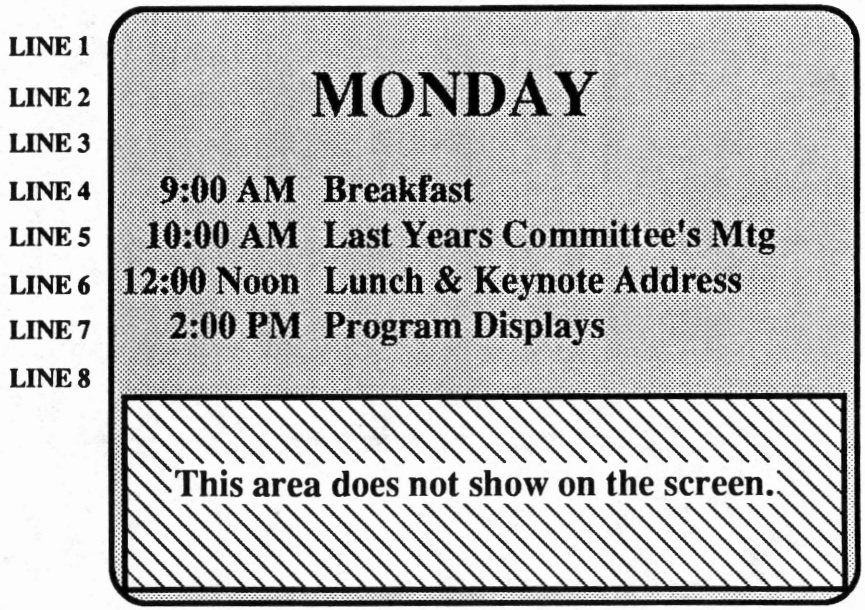


Figure 3-11. MONDAY Screen Display.

7. Recall page 24 and press <ENTER>. Modify the text (TUESDAY) per Figure 3-12. Select a pleasing background color (different than the preceding page color). Press the STORE key and then press <ENTER> to store the page. To verify the page press RECALL and then press <ENTER>.

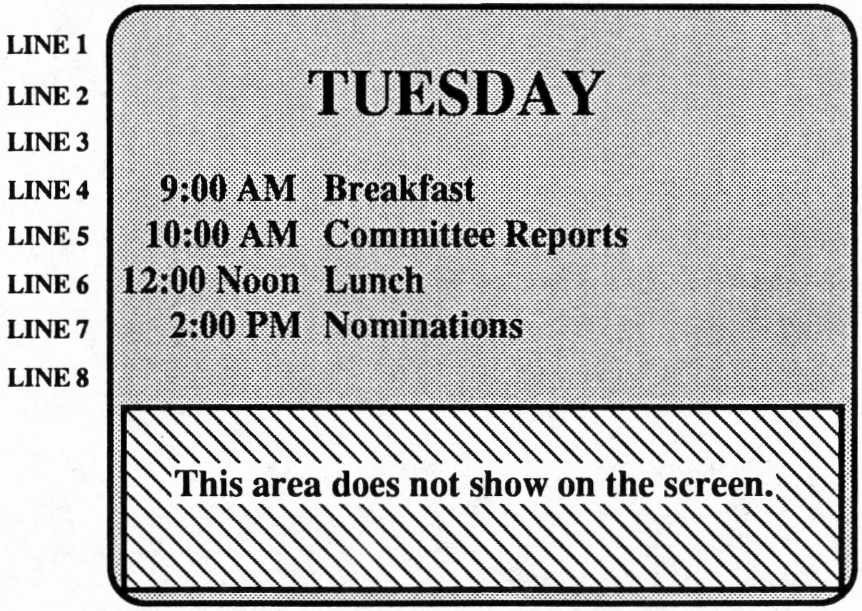


Figure 3-12. TUESDAY Screen Display.

8. Recall page 25 and press <ENTER>. Modify the text (WEDNESDAY) per Figure 3-13. Select a pleasing background color (different than the preceding page color). Press the STORE key and then press <ENTER> to store the page. To verify the page press RECALL and then press <ENTER>.

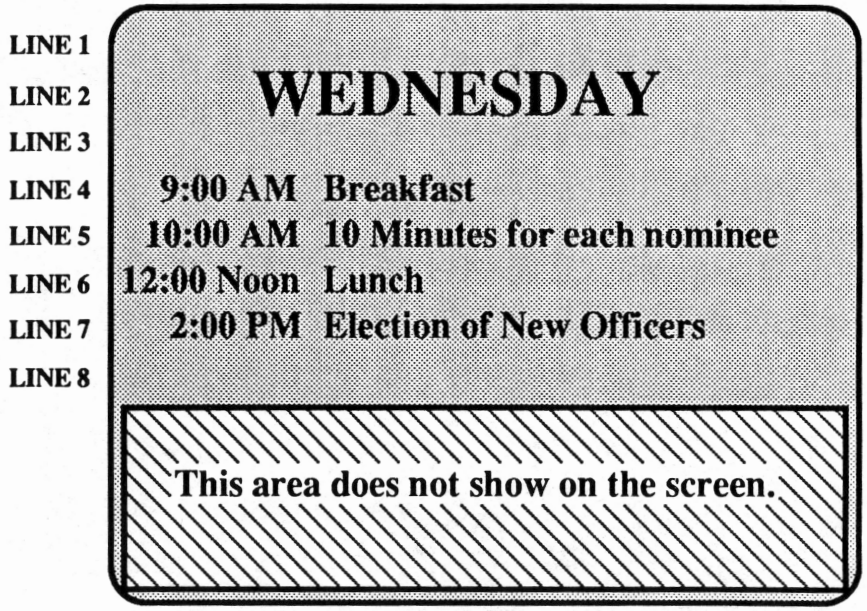


Figure 3-13. WEDNESDAY Screen Display.

9. Recall page 26 and press <ENTER>. Modify the text (THURSDAY) per Figure 3-14. Select a pleasing background color (different than the preceding page color). Press the STORE key and then press <ENTER> to store the page. To verify the page press RECALL and then press <ENTER>.

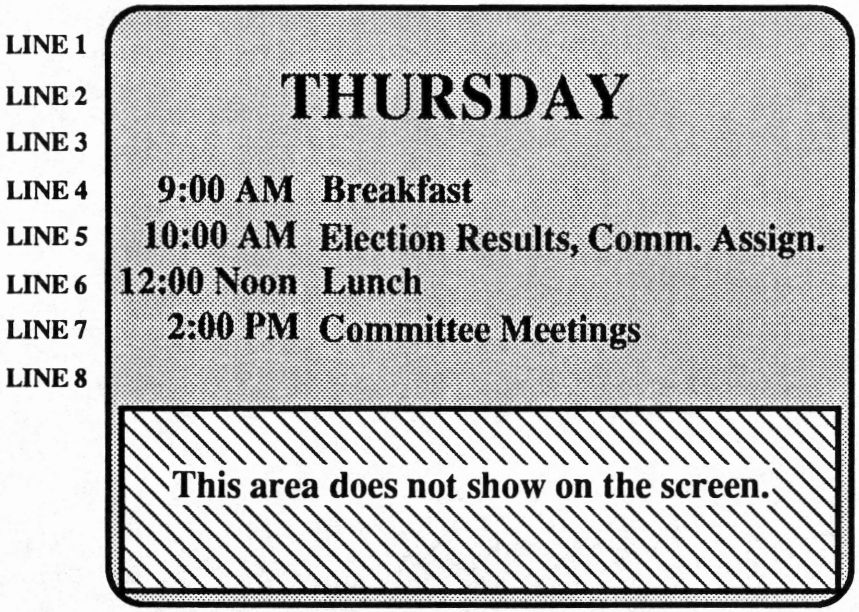


Figure 3-14. THURSDAY Screen Display.

10. Recall page 27 and press <ENTER>. Modify the text (FRIDAY) per Figure 3-15. Select a pleasing background color (different than the preceding page color). Press the STORE key and then press <ENTER> to store the page. To verify the page press RECALL and then press <ENTER>.

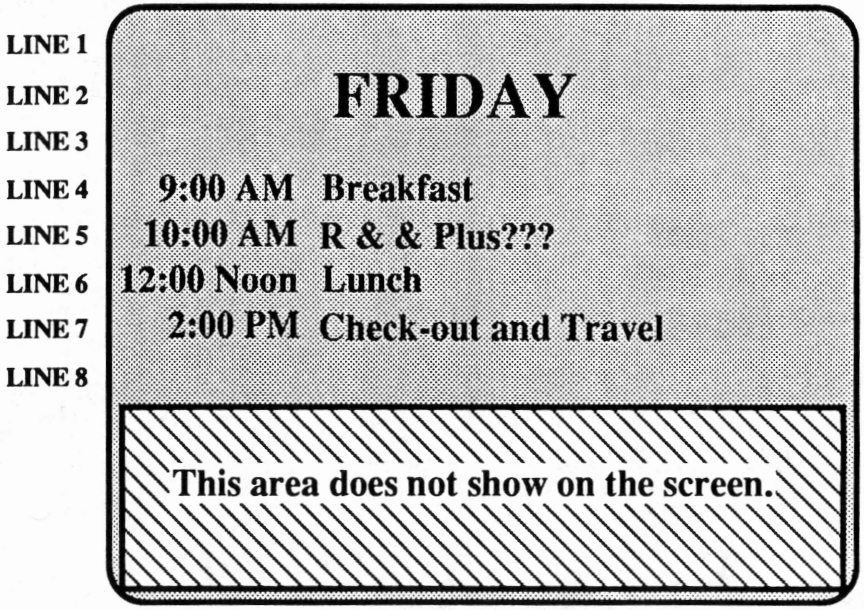


Figure 3-15. FRIDAY Screen Display.

NOTE *For variety, change the SPLASH attribute to PAGE PRINT on Tuesday (SpectraGen memory page 24) and Thursday (SpectraGen memory page 26).*

11. Recall page 28 and press <ENTER>. Hold the ALT key down and press the ERASE key to erase the page. Type the text (**Pool Party . . .**) as shown in Figure 3-16. Adjust the height and width, and select a pleasing background color (different than the preceding page color). Press DISPLY ATTRIB; select CRAWL, MEDIUM and 01 SECONDS, and exit the menu. Press the STORE key and then press <ENTER> to store the page. To verify the page press RECALL and then press <ENTER>.

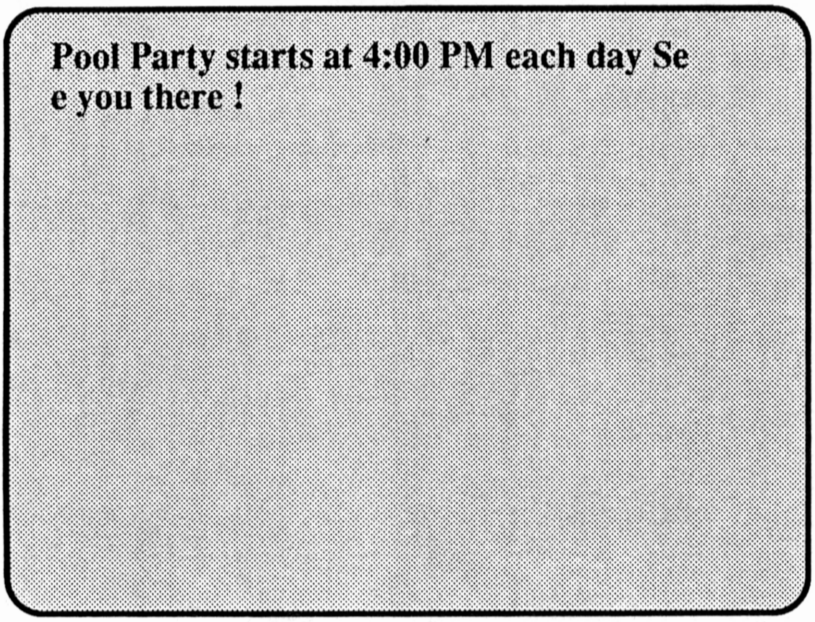


Figure 3-16. Pool Party . . . Screen Display.

Sequence the pages

Sequencing pages allows you to determine what messages will appear, in an order that you specify, in each region of the display. To sequence (or program) the pages, proceed as follows:

1. From the EDIT mode, press SEQ (the sequence key). This calls the initial sequence menu to your monitor screen (see Figure 3-17).

2. Type the region number (1) at the blinking cursor position. Then, press <ENTER>. This brings the rest of the sequence menu to your monitor screen.

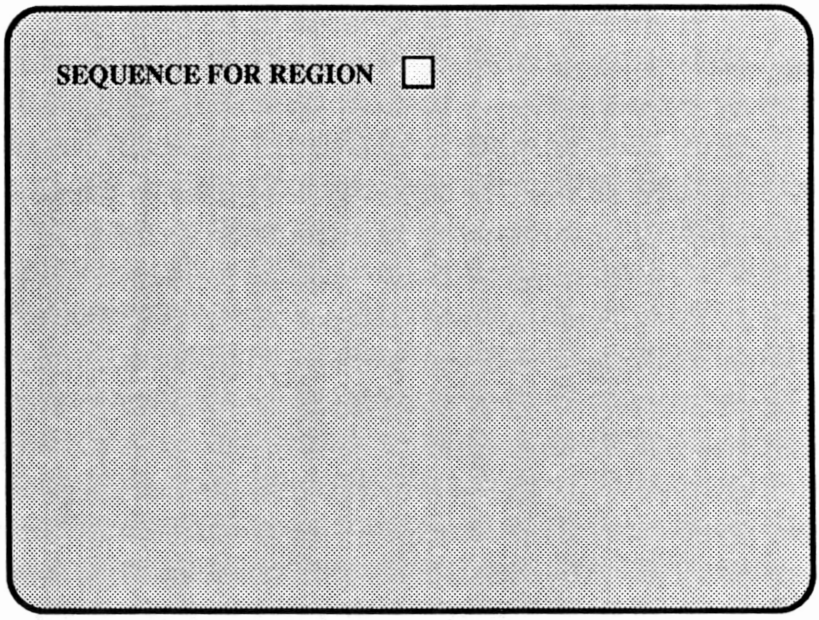


Figure 3-17. Initial Sequence Menu.

3. The cursor will be positioned under the START PAGE column in the last position of the FILE 1 number. Type a 1 at this position. This indicates the SpectraGen memory starting page number for region 1, file 1. Press <ENTER> to move the cursor to the STOP PAGE column. Type a 1 at this position. This indicates the SpectraGen memory ending page number for region 1, file 1. Press <ENTER> to move the cursor to the CHANGE FILE column. Type a 1 at this position. This indicates the number of pages that will be displayed from file 1, before displaying pages from the next file.

NOTE *A file is a group of sequentially numbered SpectraGen memory pages, or a single page.*

4. Your sequence menu should now look like Figure 3-18. Press <ENTER> repeatedly to store this sequence and exit the menu.

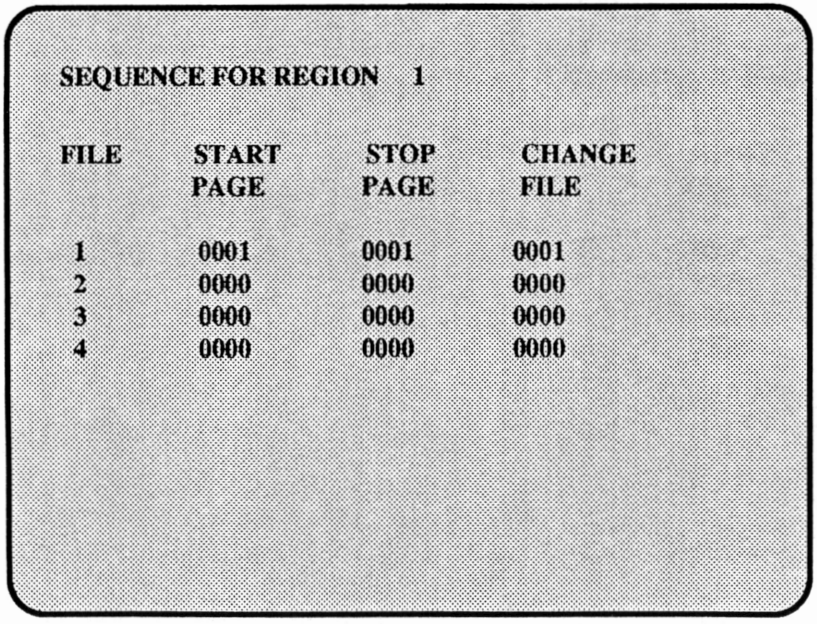


Figure 3-18. Sequence Menu for Region 1.

5. Your SpectraGen will return to the EDIT mode at the next page. Press SEQ to call the initial sequence menu to your monitor screen again (refer to Figure 3-17).

6. Type region number 2 at the blinking cursor position. Then, press <ENTER>. This again brings the rest of the sequence menus to your monitor screen.

7. The cursor will be positioned under the START PAGE column in the last position of the FILE 1 number. Type a 2 at this position. This selects the SpectraGen memory starting page number for region 2, file 1. Press <ENTER> to move the cursor to the STOP PAGE column. Type a 2 at this position. This selects the SpectraGen memory ending page number for region 2, file 1. Press <ENTER> to move the cursor to the CHANGE FILE column. Type a 1 at this position. This selects the number of pages that will be displayed from file 1, before displaying pages from the next file.

8. Your sequence menu should now look like Figure 3-19. Press <ENTER> repeatedly to store this sequence and exit the menu.

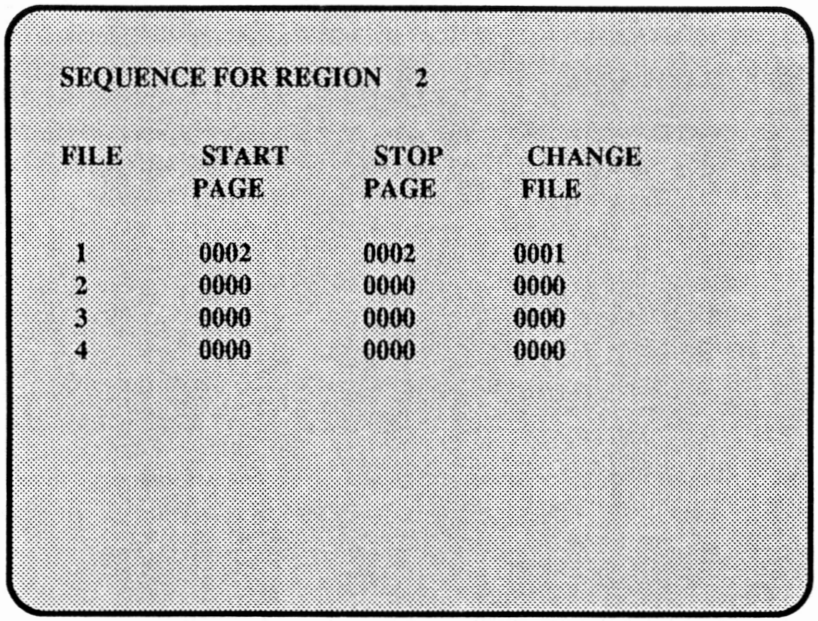


Figure 3-19. Sequence Menu for Region 2.

9. Your SpectraGen will return to the EDIT mode at a text page. Press SEQ to call the initial sequence menu to your monitor screen again.

10. Type region number 3 at the blinking cursor position. Then, press <ENTER>. This brings the rest of the sequence menu up.

NOTE *You may wish to refer to your memory page list (sample previously shown in Figure 3-8) during the procedure.*

11. The cursor will be positioned under the START PAGE column in the last position of the FILE 1 number. Type 21 at this position. This selects SpectraGen memory starting page number for region 3, file 1. Press <ENTER> to move the cursor to the STOP PAGE column. Type 27 at this position. This selects the SpectraGen memory ending page number for region 3, file 1. Press <ENTER>

to move the cursor to the CHANGE FILE column. Type a 7 at this position. This selects the number of pages that will be displayed from file 1, before displaying pages from the next file.

12. Your sequence menu should look like Figure 3-20. Press the <ENTER> key repeatedly to store this sequence and to exit the menu.

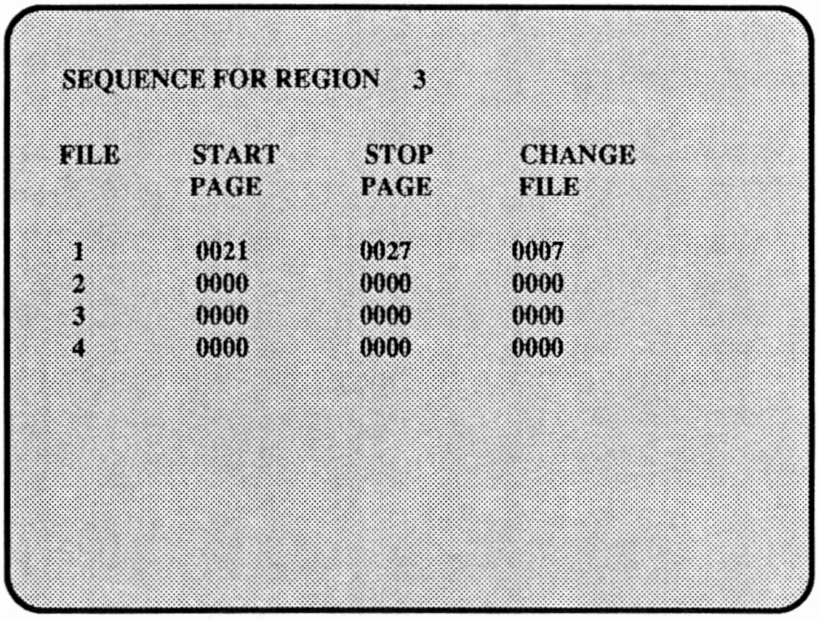


Figure 3-20. Sequence Menu for Region 3.

13. Your SpectraGen will return to the EDIT mode at a text page. Press SEQ to call the initial sequence menu again.

14. Type region number 4 at the blinking cursor position. Then, press <ENTER>. This brings the rest of the sequence menu up.

15. The cursor will be positioned under the START PAGE column in the last position of the FILE 1 number. Type 3 at this position. This indicates the SpectraGen memory starting page number for region 4, file 1. Press <ENTER> to move the cursor to the STOP PAGE column. Type 3 at this position. This indicates the SpectraGen memory ending page number for region 4, file 1. Press <ENTER> to move the cursor to the CHANGE FILE column. Type a 1 at this position. This indicates the number of pages that will be displayed from file 1.

16. Your sequence menu should now look like Figure 3-21. Press <ENTER> repeatedly to store this sequence and exit the menu. Your SpectraGen will return to the EDIT mode at a text page.

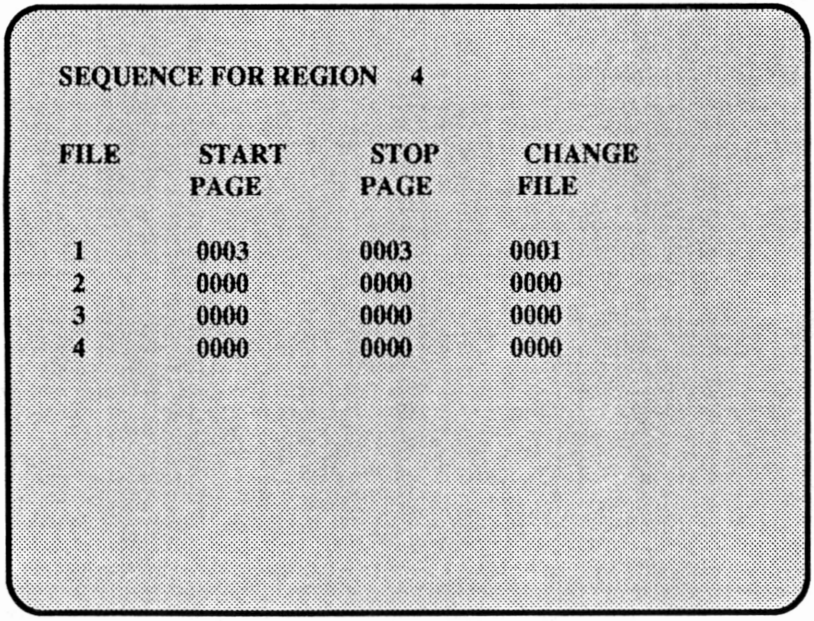


Figure 3-21. Sequence Menu for Region 4.

Resume Normal (Display Mode) Operation

When you are satisfied that these procedures have been completed, press RESUME DISPLY to enter the display mode and watch your messages on the monitor screen to verify that they are being displayed the way you want them displayed. Pressing the RESUME DISPLY also instructs the SpectraGen to display your messages on all of the video devices (television sets) in your distribution network.

Using the Optional Customer Menu

The Optional Customer Menu is available for changing customer options from the factory defaults. To get into the Customer Menu, first press the EDIT key; then hold down the SHIFT key while pressing the EDIT key. A screen will appear showing the software version and date. Press <ENTER> and the following screen will then appear as shown in Figure 3-22.

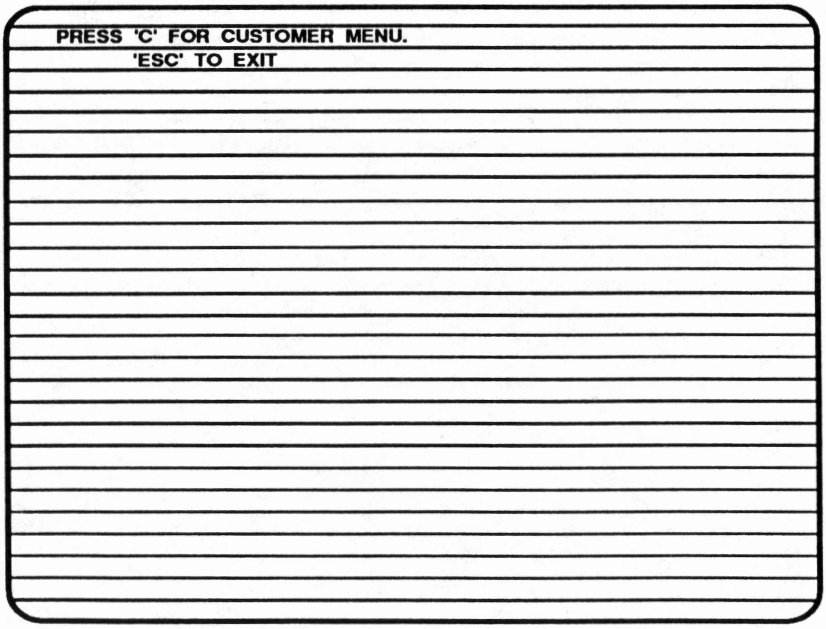


Figure 3-22. Optional Customer Menu Display.

Customer Menu Options

Press the "C" key to display the Customer Menu Options. The screen will appear as shown in Figure 3-23.

NOTE: *The Customer Menu Options cannot be accessed from Remote Edit.*

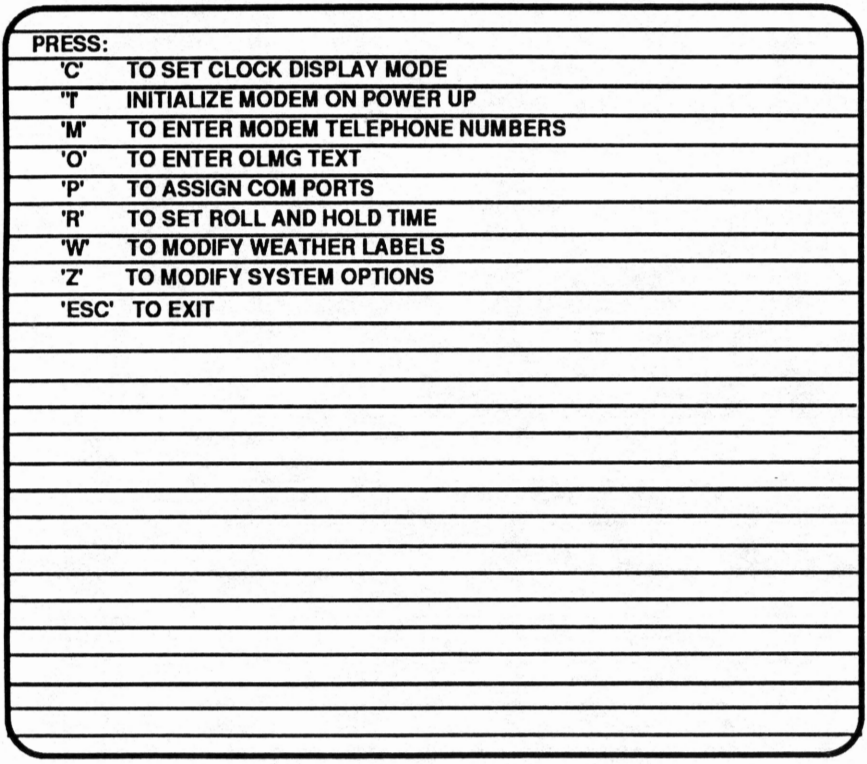

PRESS:
'C' TO SET CLOCK DISPLAY MODE
'I' INITIALIZE MODEM ON POWER UP
'M' TO ENTER MODEM TELEPHONE NUMBERS
'O' TO ENTER OLMG TEXT
'P' TO ASSIGN COM PORTS
'R' TO SET ROLL AND HOLD TIME
'W' TO MODIFY WEATHER LABELS
'Z' TO MODIFY SYSTEM OPTIONS
'ESC' TO EXIT

Figure 3-23. Customer Menu Options.

A description of the Customer Menu Options are given in the following paragraphs:

To Set Clock Display Mode

If you desire to change the clock display, press the "C" key, and the screen will appear as shown in Figure 3-24.

```
                    TIME CLOCK MODE SET

12/24 HOUR:    12
DISPLAY        ALL
POSITION       CENTER
RX ZONE        07
TX ZONE        07

USE SPACE BAR TO CHANGE THESE VALUES,
PRESS 'ENTER' FOR NEXT LINE AND EXIT.

RX ZONE IS THE TIME ZONE THAT THIS
CHARACTER GENERATOR IS LOCATED IN.

TX ZONE IS THE TIME ZONE THAT THE
TRANSMITTING CHARACTER GENERATOR
IS LOCATED IN THAT IS SETTING THE
'BATCH 9999 TO TRANSFERS'

TIME ZONES ARE MEASURED FROM GREENWICH
AS TIME ZONE 1 AND INCREASE FROM 2 TO
24 GOING WESTWARD.  ANY DIFFERENCE IN
IN ZONES IS ADDED TO THE TRANSMITTED
TIME FOR THE CORRECT LOCAL TIME.
(EST IS ZONE 5,  PST IS ZONE 8)
```

Figure 3-24. Set Clock Display Mode.

The spacebar is used to change any of the values. The <ENTER> key is used to advance to the next line, and to exit through the menu.

12/24 HOUR. This is the time mode the clock is set for whether it is a 12 hour clock or a 24 hour clock

DISPLAY. This allows you to set the clock for ALL (TIME and DATE); TIME only, or DATE only.

POSITION. This allows you to position, either the TIME or DATE, in the CENTER, LEFT, or RIGHT positions. (This only CENTER's when using the ALL display.)

RX ZONE. Indicates the time zone that this SpectraGen is located in.

TX ZONE. Indicates the time zone that the transmitting SpectraGen is located in that is setting the time with **KEYBOARD DIRECT.**

TX and RX zone numbers are only used if remote CG's are to receive time updates from Batch Transfer 9999 Code Transfers. Otherwise, they shoul be the same. Refer to the following table.

REMOTE CG NY TIME ZONE 5	CENTRAL CG CHI TIME ZONE 6	REMOTE CG SLC TIME ZONE 7	REMOTE CG LA TIME ZONE 8
TX = 6 RX = 5	TX = 6 RX = 6	TX = 6 RX = 7	TX = 6 RX = 8
	BATCH TRANSFER 'S' SEND 9999 CODES		

NOTE: In REMOTE CG, there will be a time difference between display and set clock menu.

To Initialize Modem on Power Up

If you desire to initialize modem on power up, press the "I" key, and the screen will appear as shown in Figure 3-25

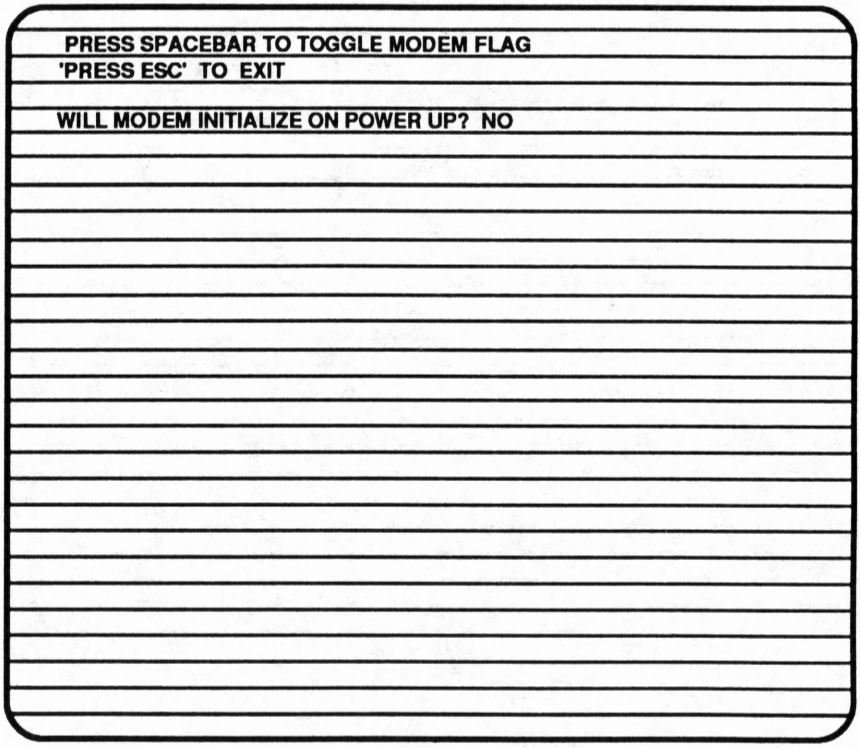


Figure 3-25. Initialize Modem on Power Up Request.

If you press **YES**, the screen will appear as shown in Figure 3-26.

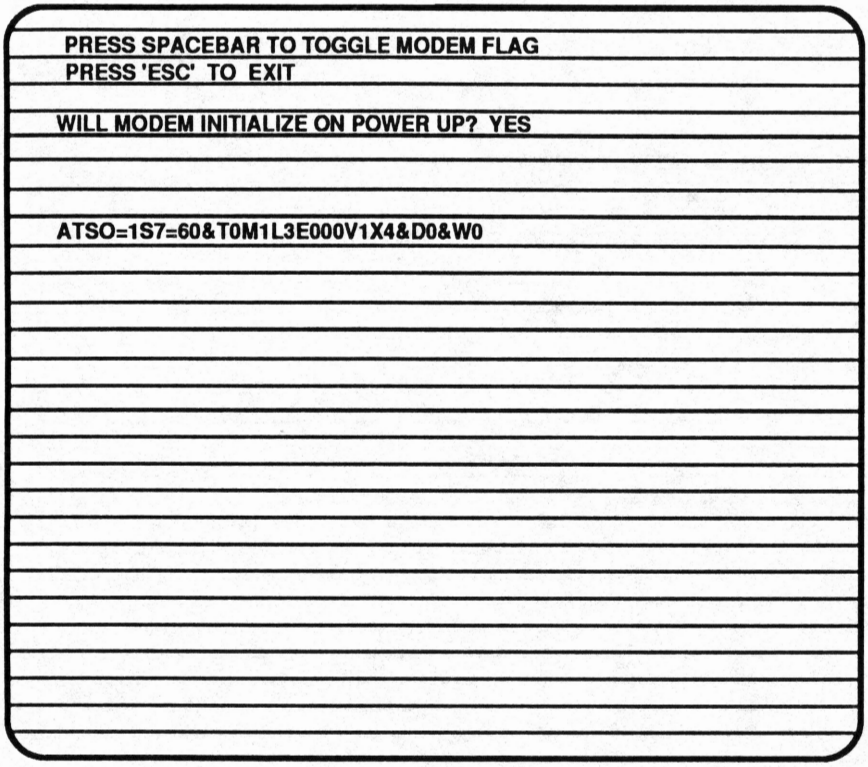

PRESS SPACEBAR TO TOGGLE MODEM FLAG
PRESS 'ESC' TO EXIT
WILL MODEM INITIALIZE ON POWER UP? YES
ATSO=1S7=60&T0M1L3E000V1X4&D0&W0

Figure 3-26. YES - Initialize Modem on Power Up Request.

NOTE *If an IMX-8 unit is being used only one unit can be turned ON. Using more than one unit can confuse the modem and most likely will not get an answer.*

To Enter Modem Telephone Numbers

If you desire to enter modem auto dial numbers for BATCH TRANSFER press the "M" key, and the screen will appear as shown in Figure 3-27.

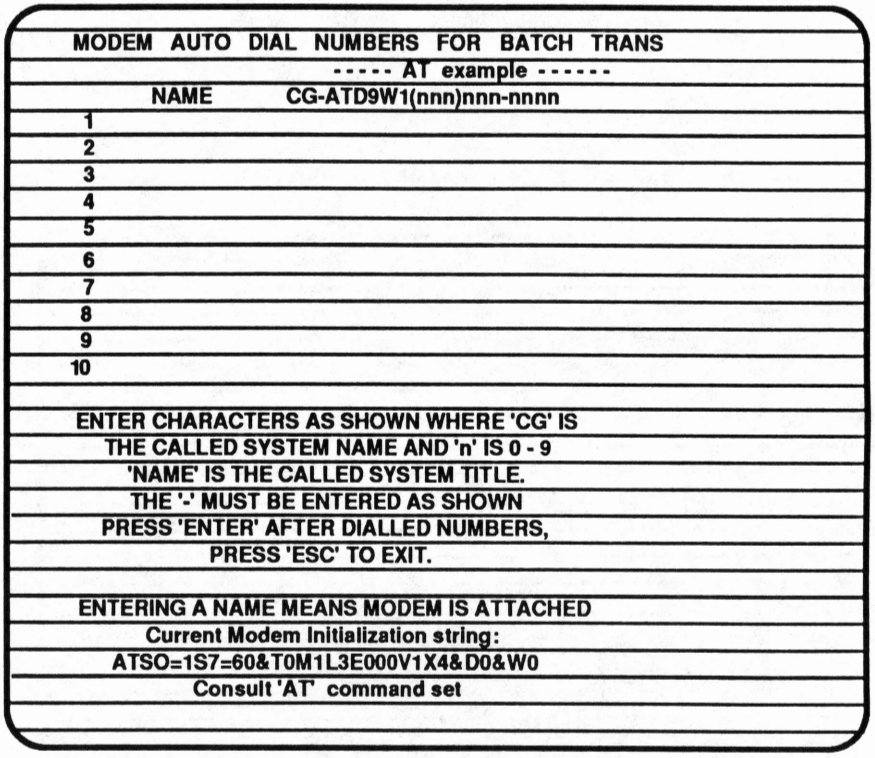


Figure 3-27. Enter Modem Telephone Numbers Display.

Refer to Figure 3-28 for an example of a typical Modem Telephone Number Display.

- On line 1 type in the system title name.
- Press the Spacebar to move the cursor directly under **CG**. Type the system name (the NAME is case sensitive; that is a lower case "**a**" is a different name than an upper case "**A**").
- A "-" (dash) must be entered after the **CG**, and then type the **AT** telephone number.
- Press <ENTER> after each dialed number. Press <ESC> to exit.

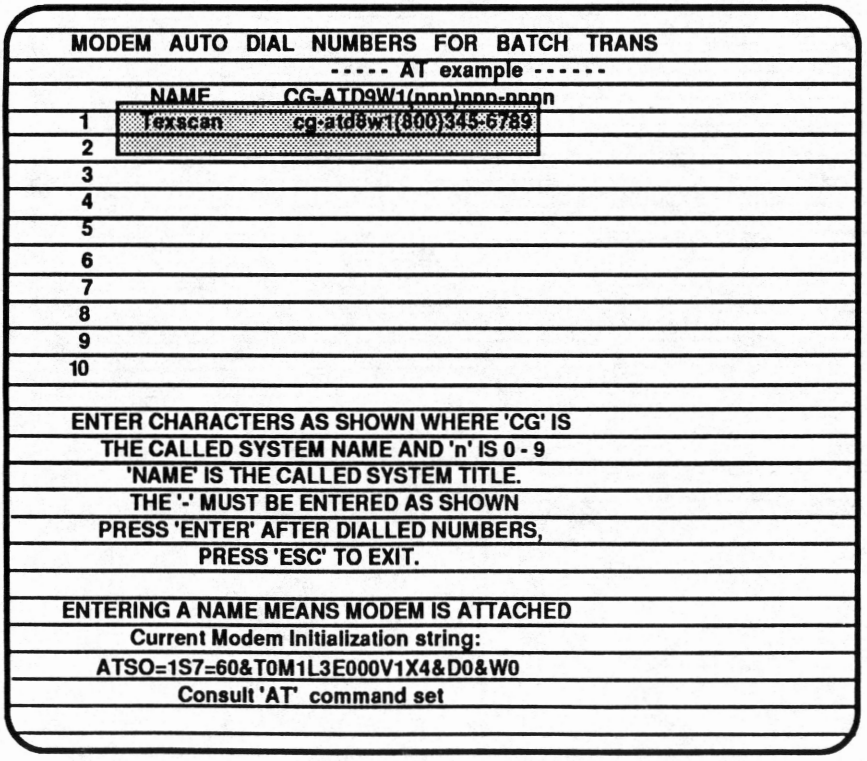


Figure 3-28. Typical Modem Telephone Number Display.

To Enter OLMG (Off-Line Message Generator) Text

The Off-Line Message Generator (OLMG) allows you to display a message to your viewers while you edit the pages in the SpectraGen.

To display the OLMG option menu, press the "O" key, and the screen will be displayed as shown in Figure 3-29.

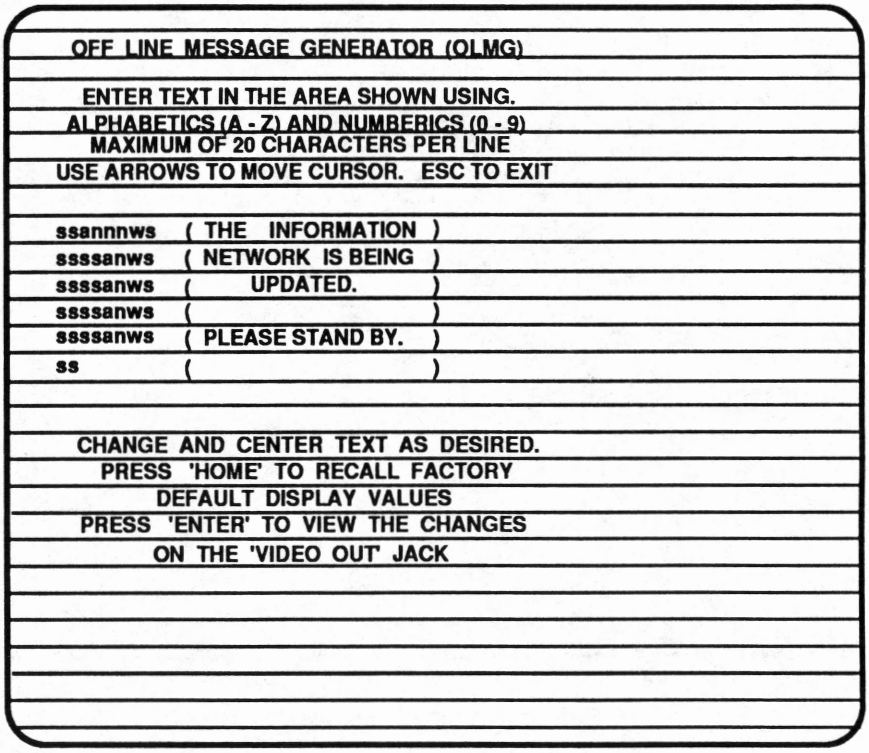

OFF LINE MESSAGE GENERATOR (OLMG)
ENTER TEXT IN THE AREA SHOWN USING.
ALPHABETICS (A - Z) AND NUMBERICS (0 - 9)
MAXIMUM OF 20 CHARACTERS PER LINE
USE ARROWS TO MOVE CURSOR. ESC TO EXIT
ssannnws (THE INFORMATION)
ssssanws (NETWORK IS BEING)
ssssanws (UPDATED.)
ssssanws ( )
ssssanws (PLEASE STAND BY.)
ss ( )
CHANGE AND CENTER TEXT AS DESIRED.
PRESS 'HOME' TO RECALL FACTORY
DEFAULT DISPLAY VALUES
PRESS 'ENTER' TO VIEW THE CHANGES
ON THE 'VIDEO OUT' JACK

Figure 3-29. OLMG Menu Display.

Change the desired text and center. Once all of the text characters have been entered, press the <ESC> key to exit and the message will be stored in memory.

To view the OLMG message, the monitor must be connected to VIDEO OUT on the SpectraGen, and then go to the Customer Menu Options to turn it ON. Press <ESC> and the monitor screen will appear as shown in Figure 3-30. Once the option is turned ON you must look at PREVIEW OUT to see the menus.

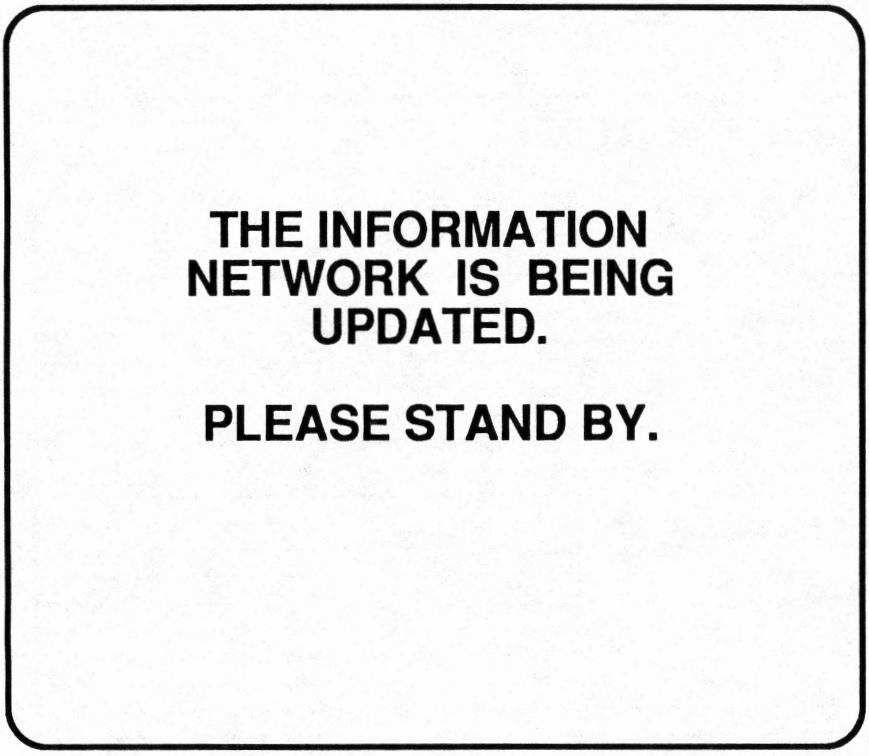


Figure 3-30. OLMG Message Display.

To Assign Com Ports

To assign Com Ports press the **"P"** key, and the screen will appear as shown in Figure 3-31.

```
        COMMUNICATION PORT ASSIGNMENTS

PORT     SERVICE      BAUD RATE     HANDSHAKE

COM 1:  BC NEWS          9600          NO
COM 2:  WEATHER           150          NO
COM 3:  KEYBOARD          300          NO
COM 4:  BATCH XFER       2400          NO
COM 5:  GENER NEWS       9600          NO

ALL PROTOCOLS ARE 8 BITS, 1 STOP BIT.
              AND NO PARITY

HANDSHAKE IS INOPERATIVE AT THIS TIME

PRESS 'SPACE' TO SELECT,
      'ARROWS' TO MOVE
      'ESC' TO EXIT
```

Figure 3-31. Communication Port Assignment Display.

It is important that the Z8 Weather Board be assigned to COM 2 port, and the baud rate be set at 150. The other services can be assigned to whatever port is desired.

Press <ESC> to return to the Customer Menu Option screen.

To Set Roll and Hold Time

To set the Roll and Hold Time press the **"R"** key, and the screen will be displayed as shown in Figure 3-32.

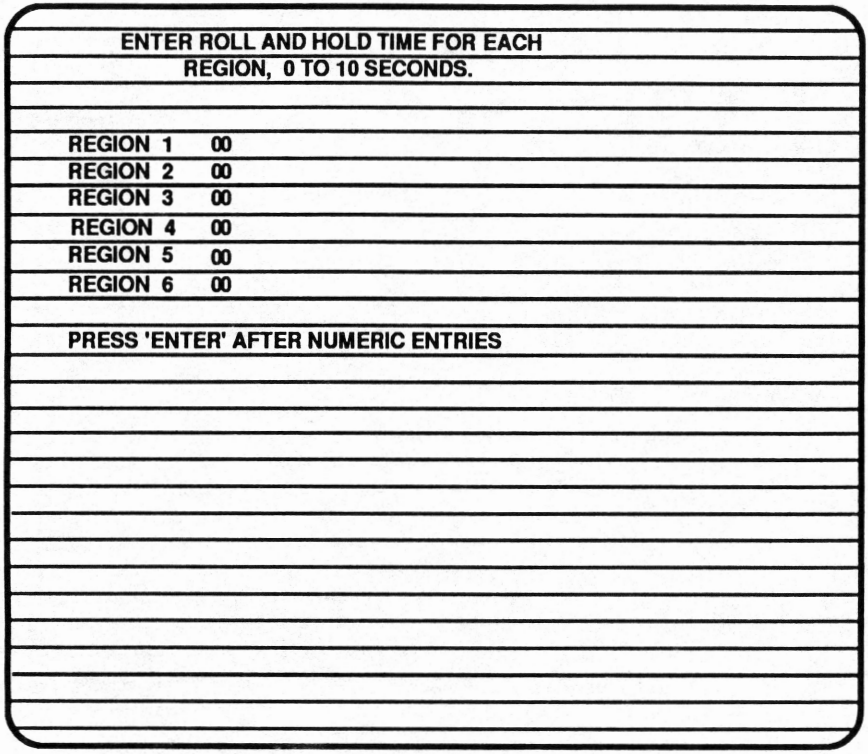


Figure 3-32. Set Roll and Hold Time Display.

This menu allows you to set the time and roll for each region from 0 to 10 seconds. Press <ENTER> after each entry made. To exit, continue to press <ENTER> through each region, until the Customer Menu Options screen appears.

NOTE *The page attribute must have a ROLL ATTRIBUTE.*

To Modify Weather Labels

To use the Modify Weather Labels menu, press "W", and the screen will appear as shown in Figure 3-33.

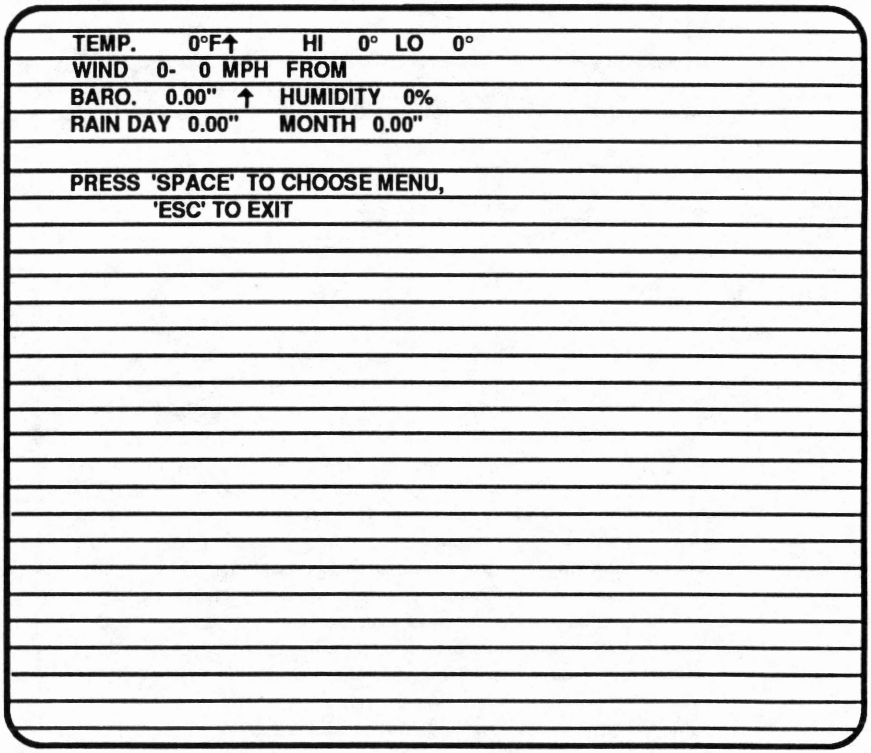


Figure 3-33. Modifying Weather Label Display.

Press the Spacebar to choose between U.S. Measures and Metric Measures. Press the <ESC> key to exit to the Customer Menu Options screen.

Press the <ESC> key again to exit from the Customer Menu.

To Modify System Options

Pressing the "Z" key allows the user to modify the system options.

NOTE *In order to change these options contact the Texscan MSI Field Service Department at (801) 359-0077.*

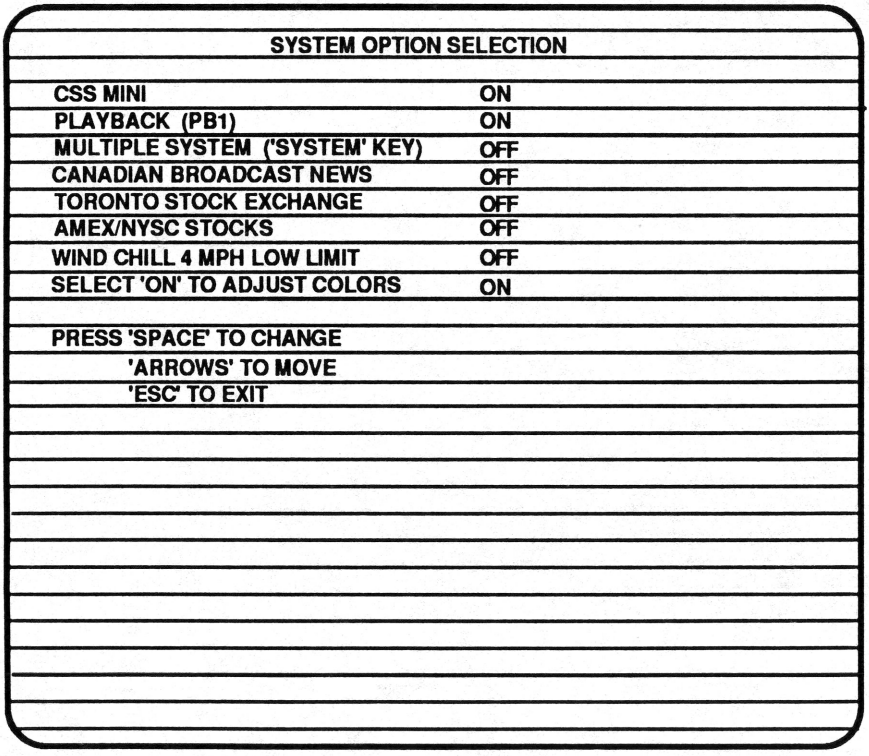

SYSTEM OPTION SELECTION
CSS MINI ON
PLAYBACK (PB1) ON
MULTIPLE SYSTEM ('SYSTEM' KEY) OFF
CANADIAN BROADCAST NEWS OFF
TORONTO STOCK EXCHANGE OFF
AMEX/NYSC STOCKS OFF
WIND CHILL 4 MPH LOW LIMIT OFF
SELECT 'ON' TO ADJUST COLORS ON
PRESS 'SPACE' TO CHANGE
'ARROWS' TO MOVE
'ESC' TO EXIT

Figure 3-34. Modify System Options Display.

Special Function Procedures

The following paragraphs and illustrations describe detailed key descriptions to perform special functions when operating the Spectra-Gen Z-Series System. A specific key may cover either one key or a group of related keys to perform that specific function. Refer to Chapter 4 for Keyboard Key Description and the keyboard illustration Figure FO-1 in Appendix A.

Special function procedures for **SET CHAN, SET CLOCK,** and **SEQ** have already been described earlier as part of the Weekly/Daily Operation Example write-up. **SET CHAN** is described beginning on page 3-17; **SET CLOCK** is described beginning on page 3-21; and **SEQ** is described beginning on page 3-37. The **GRAPH** key is described in Appendix B.

ATTR RESET (Attribute Reset)

Using the ALT key with the ATTR RESET key resets the attributes of the page in the edit buffer. This will not erase any of the page's text. Store the page to make the new attributes permanent. Pressing the ATTR RESET key gives the standard default settings as follows:

White Characters, Double-width, Double-height, Non-edged Characters, Blue background; Medium Splash; 15 Second Display; No Page-Link-Wait; and No Display Windows.

BATCH TRANS (Batch Transfer) (used with Break Key)

The BATCH TRANS sends all menus/pages or a subset of pages from one unit to another. With BATCH TRANS a menu/page set can be designed locally, then sent to a remote unit.

BATCH TRANS can transfer all the menus, all the pages, or part of the pages in one operation, but it cannot send all the menus and all the pages at once. The receiving unit will accept each menu and page as it is received. BATCH TRANS displays the word COMPLETE and returns to the edit mode after sending or receiving all menus or pages.

BATCH TRANS also lets restricted-access users change certain pages. The BREAK key is used to disconnect the BATCH data connection with another unit. BREAK allows BATCH TRANS to finish sending an in-process page or menu, but stops any further transmissions.

NOTE *All baud rates must be set the same as in the Customer Options Menu.* *Refer to Customer Options Menu on page 3-53.*

The following is the procedure for BATCH TRANS.

1. Press the EDIT key to put the unit in the EDIT Mode. Then press the BATCH TRANS key, and the screen will appear as shown in Figure 3-35.

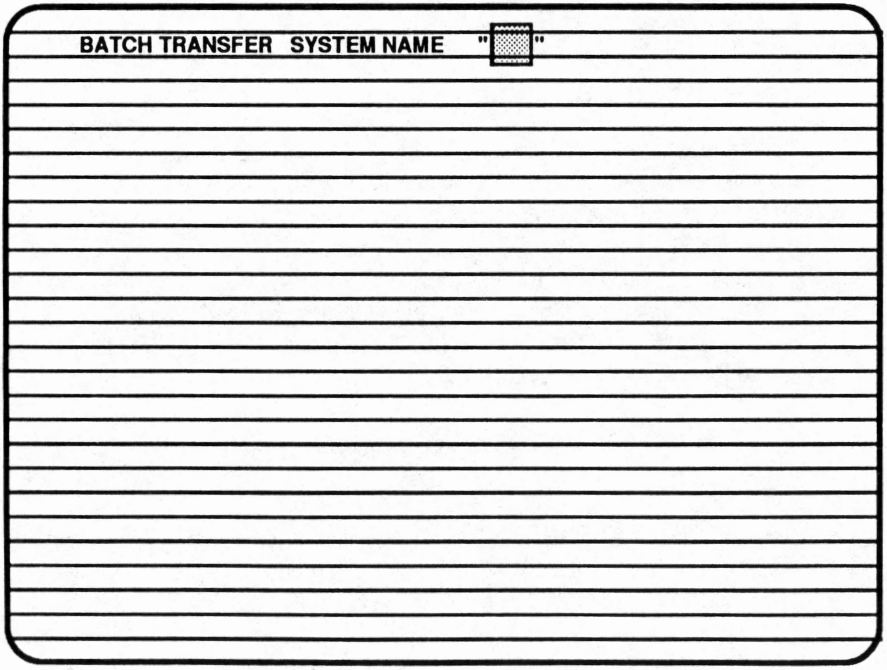


Figure 3-35. Batch Transfer Menu.

2. Type the channel name of the remote system. If you type the wrong name, just type the correct name over it. The screen will then appear as shown in Figure 3-36.

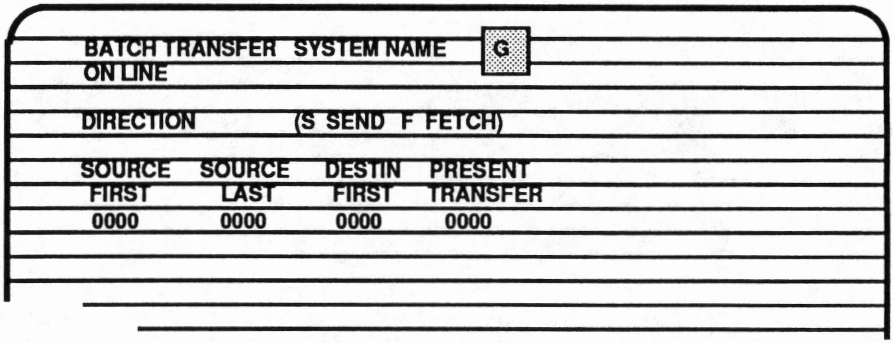


Figure 3-36. Batch Transfer Menu - Assigning System Name

3. Press the <ENTER> key.

NOTE *If the wrong system name has been entered, the remote unit will not allow access for your code. NO ACCESS will appear instead of ON LINE.*

4. The screen will appear as shown in Figure 3-37, asking which direction you desire to transmit your data; either SEND or FETCH.

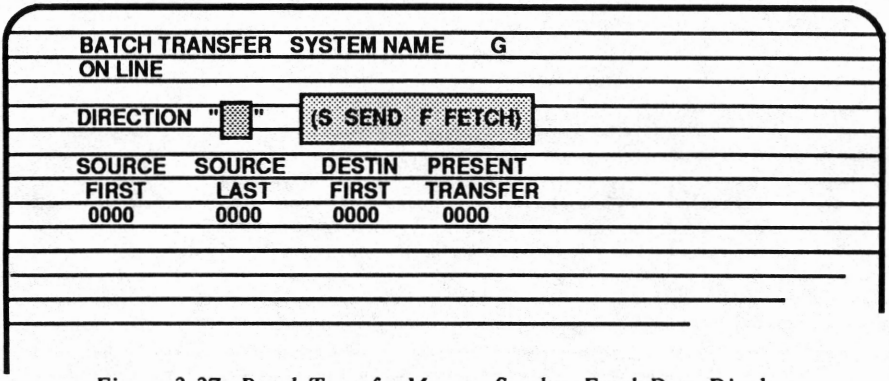


Figure 3-37. Batch Transfer Menu - Send or Fetch Data Display.

5. Type "S" if you desire to send MENU data. Press <ENTER> and the cursor will appear at the first character under SOURCE FIRST. If you want to send Menu's, type **9999** and then press <ENTER>. The cursor will move to the first character under SOURCE LAST. Type **9999.** See Figure 3-38.

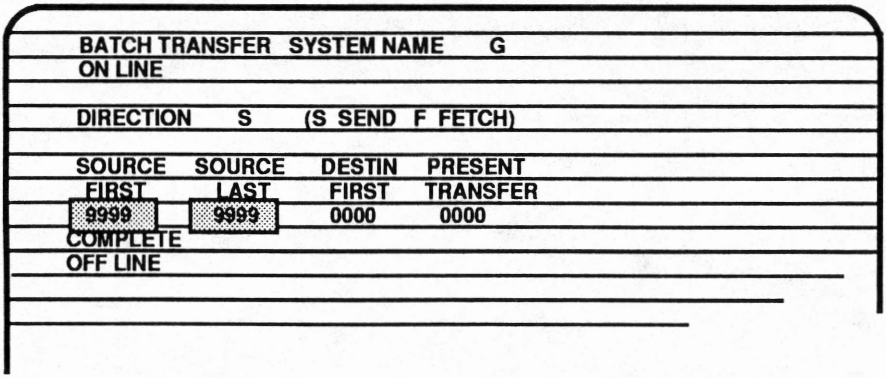


Figure 3-38. Batch Transfer Menu - Send Menu Display.

6. Press the <ENTER> key. PRESENT TRANSFER will display menu letters and event numbers during transmission. COMPLETE will appear when the transfer ends.

7. As shown in Figure 3-39, if you desire to send PAGES, type the number of the first page under SOURCE FIRST, then press <ENTER>.

8. Next, type the number of the last page under SOURCE LAST, and press <ENTER>.

9. Then type the number of the first page of the set of destination pages, and press <ENTER>. PRESENT TRANSFER will display each page's number during transmission. When the transfer is finished, the word COMPLETE will appear.

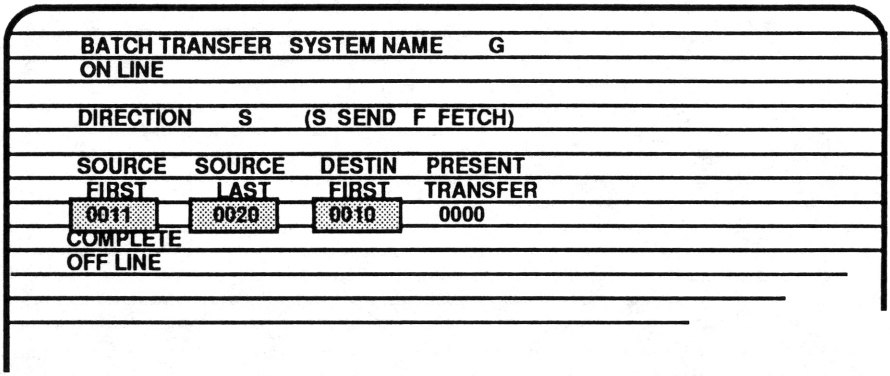


Figure 3-39. Batch Transfer Menu - Send Pages Display.

10. Press the RESUME DISPLY key to continue operation.

BLOCK EDIT

BLOCK EDIT allows a multi-page block of text to be edited without regard for page boundaries. BLOCK EDIT automatically re-distributes the rest of the text block across the off-screen pages as you add or subtract to/from the screen edit pages.

The following is the procedure for BLOCK EDIT.

1. Press the EDIT key to put the unit in the EDIT Mode, then press the BLOCK EDIT key to bring up the block edit menu as shown in Figure 3-40.

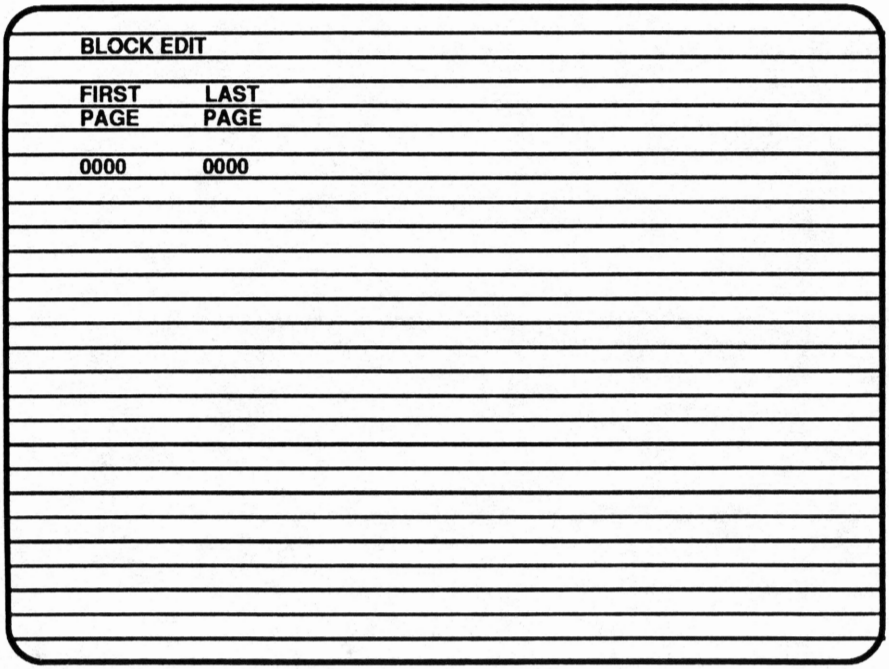


Figure 3-40. Block Edit Menu.

2. As shown in Figure 3-41, type the number of the edit block's FIRST PAGE, then press <ENTER> to store this number and move the cursor to LAST PAGE. Type the number of the LAST PAGE, then press <ENTER> to store this number and the menu.

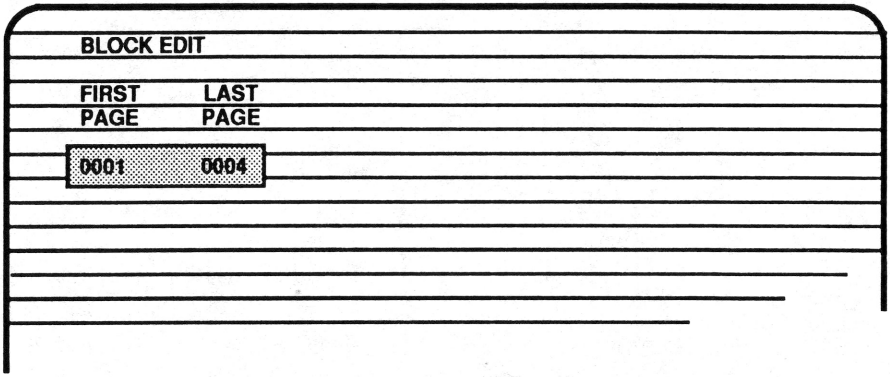


Figure 3-41. Block Edit Menu - Pages to be Blocked Display.

3. Press the EDIT key followed by the RECALL key. The screen will appear as shown in Figure 3-42.

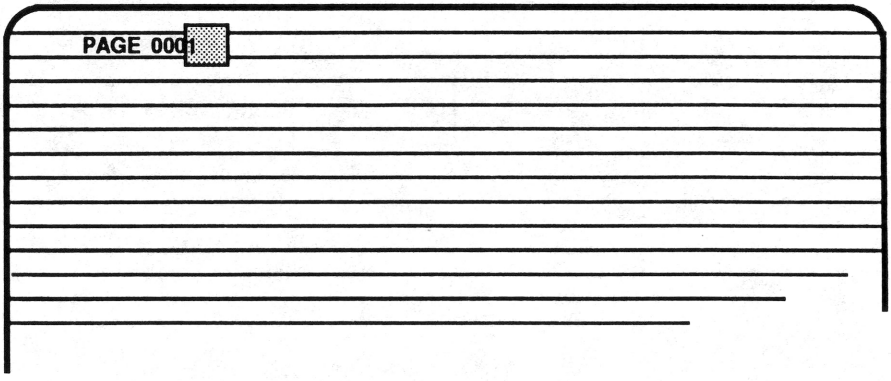
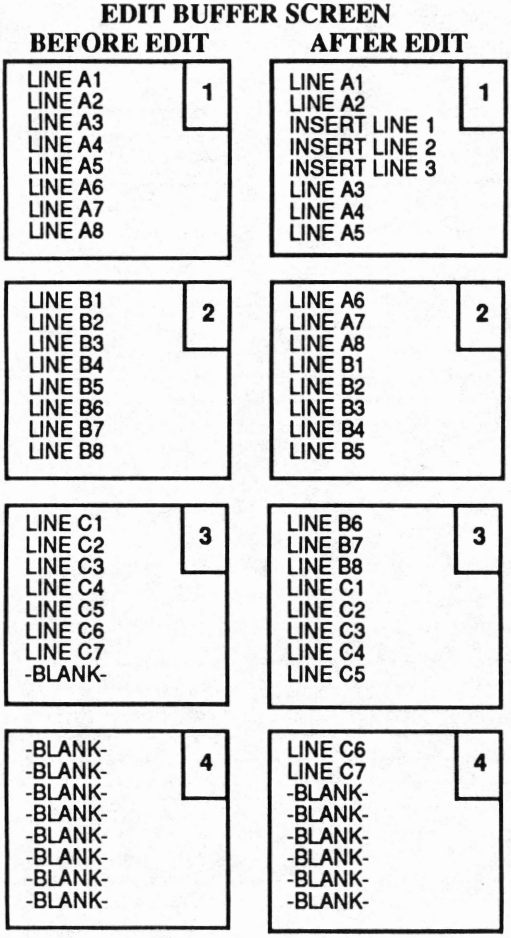


Figure 3-42. Recall Menu.

4. As shown in Figure 3-42, type in the number 1, as this is the page that changes will first occur in.

5. For example, refer to Figure 3-43 Block Edit Diagram for inserting lines, and how pages are repaginated.



FIRST. Use the BLOCK EDIT key to designate pages 1 thru 4 as block edit pages.

SECOND. Press the RECALL key to call page 1 into the edit buffer.

THIRD. Insert lines 1 thru 3.

FOURTH. STORE the edit buffer pages to make the new versions of page 1 and 2 permanent.

Inserting lines 1 thru 3 in page 1 will cause page 3 to accept lines B6, B7 and B8 from the edit buffer, and page 4 to accept lines C6 and C7. BLOCK EDIT stored the new versions of these pages automatically.

The bottom blank lines from page 4 did not push onto page 5 (not shown), because the block edit page set includes only pages 1 thru 4

Figure 3-43. Block Edit Example - Inserting Lines.

6. After editing is completed remove the page numbers from Block Edit before pressing the RESUME DISPLY key.

ACCESS CODES.

This key accesses the code menu which establishes the internal security codes that remote users must know in order to access the unit with their KEYBRD DIRECT, REMOTE EDIT, and BATCH TRANS keys. Each code may permit full (menus and pages) or restricted (specified pages) access; dependent upon actions by the controlling operator.

The following is the procedure for ACCESS CODES.

1. To assign access codes or set up restrictions, press the EDIT key to put the unit in the EDIT Mode, then press the ACCESS CODES key. The screen will appear as shown in Figure 3-44.

LIMIT REMOTE ACCESS? " " (Y / N)

USER CODE	START PAGE	STOP PAGE
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000
	0000	0000

Figure 3-44. Access Codes Menu.

2. Type "N" for NO if you want to limit remote access only by system name. (Typing "N" will turn the screen OFF.) Type "Y" for YES, if you want to stop access or limit it with access codes.

3. Press <ENTER>, the cursor will appear under USER CODE.

4. Refer to Figure 3-45 for the following paragraphs.

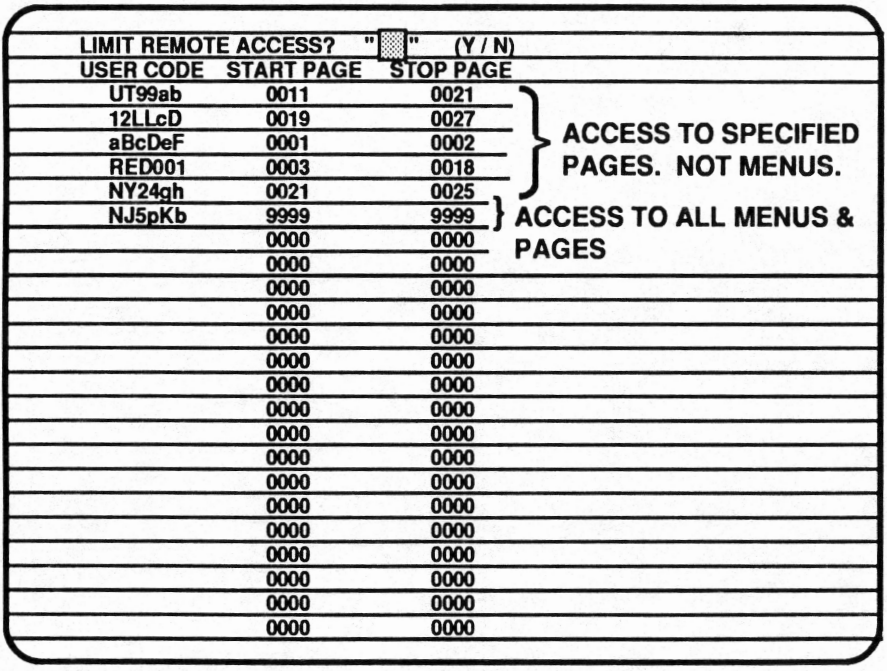

LIMIT REMOTE ACCESS? " " (Y / N)
USER CODE START PAGE STOP PAGE
UT99ab 0011 0021
12LLcD 0019 0027
aBcDeF 0001 0002
RED001 0003 0018
NY24gh 0021 0025
NJ5pKb 9999 9999
0000 0000
ACCESS TO SPECIFIED PAGES. NOT MENUS.
ACCESS TO ALL MENUS & PAGES

Figure 3-45. Assigning User Codes.

a. As shown in Figure 3-45, you will enter six digit user codes which can be made up of page numbers to give the user access only to a specific block of pages and not to the menus. Or, you may enter "9999" in both blocks to give the person who knows this access code to all the menus and pages. The six digit user code may be any combination of letters, numbers, spaces, and punctuation marks.

NOTE *It is very important that the user writes down, and saves, these assigned user codes and page numbers for future reference.*

b. After you have entered your last code and page number(s), press the <ENTER> key repeatedly to step through the rest of the codes.

Changing Access Codes or Page Blocks. To change any entry in the menu perform the following:

1. Press the ACCESS CODES key to bring up the menu.
2. Press the <ENTER> key repeatedly through the menu to the point of change.
3. Type in the new access code or page number(s).
4. Press <ENTER> repeatedly through the menu.

Complete Restriction. To stop all remote access, enter '**Y**' for YES to LIMIT REMOTE ACCESS?, then press <ENTER> repeatedly to step through the menu. Press the STORE key to store the menu without access codes or page numbers.

CHARACTER DESIGN KEYS

FONT key. Selects the font for a word or phrase. The line of text on which the cursor appears may have the font changed when used with the SHIFT key. When this key is tapped while the ALT key is held down, the font is then changed for the entire page.

ALT FONT key. Gives a word or phrase an alternate font. When you use it, it inserts a hidden control character in the spaces before and after the word or phrase.

- **ALT FONT Control Characters** are hidden characters embedded in the text. As these characters are placed with the ALT FONT key, they appear as blank spaces on the screen, and act until cancelled by the end of the line or another ALT FONT character. Add or remove ALT FONT characters while the page is in the edit buffer, then store the page to make them permanent.

- **ALT FONT Character Insertion** is done in the following manner:

  1. Put the cursor in the space before the word/phrase.
  2. Press the ALT FONT key to change the space to an ALT FONT character.
  3. Move the cursor to the space after the word/phrase.
  4. Press the ALT FONT key.

  To put alternate font to an entire page, put the ALT FONT character at the start of every line.

- **ALT FONT Character Removal** is done by putting the cursor on the ALT FONT character, and then pressing the spacebar (or any other character). This will write a space (or other character) in place of the ALT FONT character. If a line has several ALT FONT characters, removing one will change the effect of the others and will cause words that didn't have the font before to get it. Write over all the ALT FONT characters to eliminate the unwanted fonts.

HEIGHT Key. Tapped by itself, this key will change the height of characters on the line in which the cursor appears. Tapped with the ALT key, the height of all characters on the page will change in sequence with the number of taps (rotating through 8-character heights).

WIDTH Key. When pressed repeatedly, will rotate through eight different character widths affecting the line. When the ALT key is pressed and held down while the WIDTH key is pressed, the character width is affected on the entire page.

BORDER Key. Adds an encompassing border to all characters on a line (or page when used with the ALT key). The border may be plain black, white, or complimentary color. The character may be in background color with a border only. To see if this feature suits your needs, tap the BORDER key repeatedly while an edit page is on screen.

EDGE Key. Adds a right-hand shadow to all the characters on the line with the cursor. Used with the ALT key, a right-hand shadow is added to all the characters on a PAGE. Press repeatedly to select no edging or one of three edging widths.

COLOR Key

The COLOR key allows the user to specify whether a chosen color is to be used for a word, phrase, line or for the entire page. By itself, the COLOR key gives a word, phrase, or line segment an alternate background and character color combination by inserting hidden control characters in the spaces before and after the word/phrase. It reverts to the original color scheme by pressing the SPACEBAR while the cursor is over the hidden character. By pressing and holding SHIFT, then tapping the COLOR key, a color can be set for a LINE of characters. By pressing and holding ALT, then tapping the COLOR key, a color can be set for a PAGE.

COLOR Programming Option

This key only allows the user to change the default or primary color palette.

When in the Edit Mode, holding the CTRL key down and pressing "+" plus key or "-" minus key allows altering the background color pallete. The cursor position identifies the color to be changed. When a color is changed, that color is changed on all pages. Pressing the CTRL key and the "Down Arrow" key selects the factory colors, and pressing the ALT key and the "Down Arrow" key selects the programmed colors.

DISPLY ATTRIB (Display Attributes)

Displays the page attributes menu of the page in the edit buffer. Each page has an individual menu that controls the following attributes: 1. Display Type, Speed and Time; 2. Page, Skip, Link and Wait; 3. Display Time Window; and 4. Line Levels (for control of external equipment).

The following is the procedures for DISPLY ATTRIB.

1. Call a page into the edit buffer by pressing the EDIT key followed by the RECALL key, then type the page number to be affected.

2. Press the DISPLY ATTRIB key, and the screen will appear as shown in Figure 3-46. (Each page will automatically have these attributes until changed.)

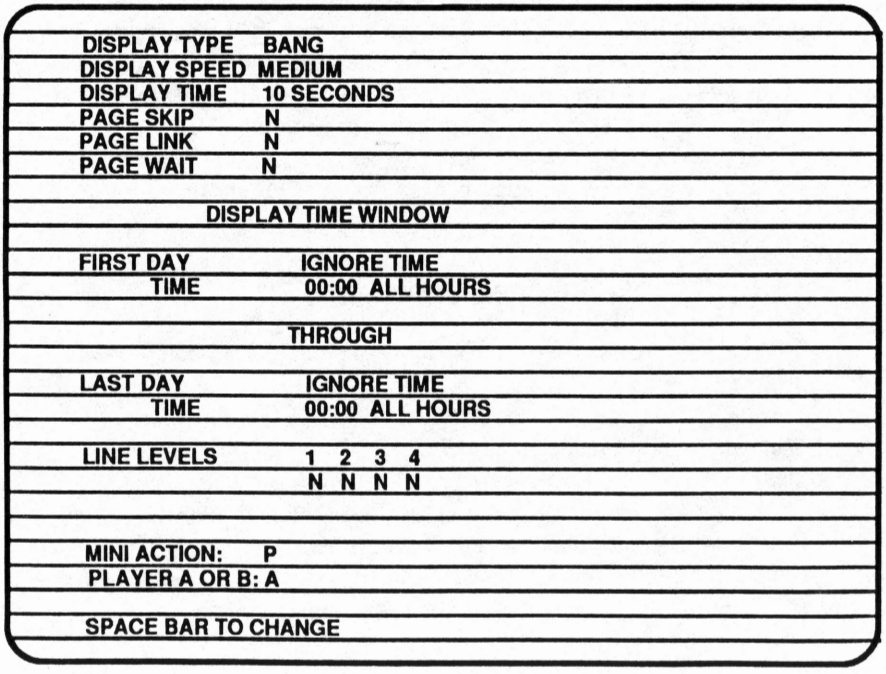


Figure 3-46. Display Attributes Menu.

3. Fill out the page menu as desired.

4. **DISPLAY TYPE.** This selects the method used to move text onto the screen. Press the SPACEBAR to select either BANG, CRAWL, PAGE PRINT, ROLL OR SPLASH. See Figure 3-47.

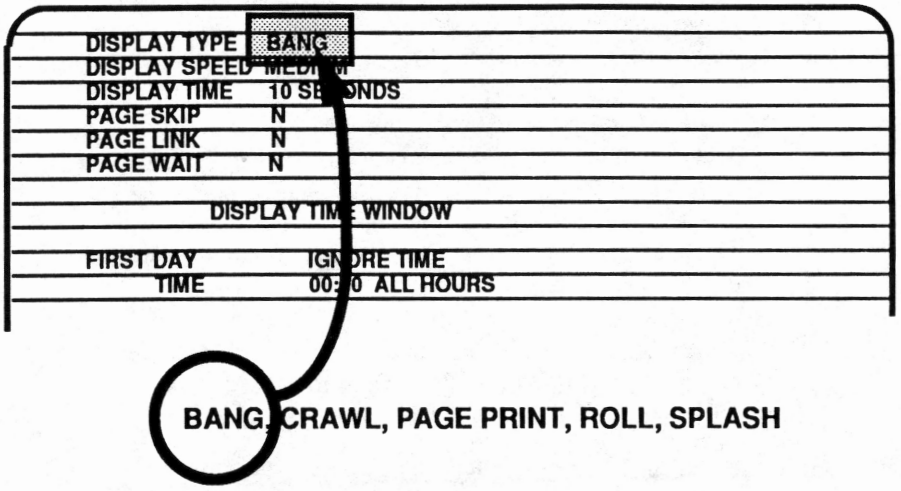


Figure 3-47. Display Type Attribute.

a. **BANG** makes all the text lines of a page appear simultaneously on the screen. DISPLAY SPEED has no effect on BANG. Enough DISPLAY TIME should be allowed for the viewer to read the page after it appears.

b. **CRAWL** pulls the text horizontally across the screen from right to left in one continuous line at a slow, medium, or fast DISPLAY SPEED. Set DISPLAY TIME of crawl pages to 00 seconds. Do not hyphenate any text entered at the keyboard, as this will cause gaps within crawling words. Make the height of the characters fit the region, as smaller characters will crawl across the top of the region and leave the rest blank. Link successive crawl pages or a blank line will crawl across the screen at the end of each page. CRAWL will skip blank lines in the middle of a page, but will run all of any line with one or more non-space characters.

c. **PAGE PRINT** makes the text appear one character at a time. DISPLAY SPEED makes the characters appear at slow, medium, or fast rate. Select a DISPLAY TIME that gives the viewer time to finish reading the page after the last character appears.

d. **ROLL** pulls the page continuously up the screen. DISPLAY SPEED makes the lines appear at a slow, medium, or fast rate. Select a DISPLAY TIME that gives the viewer time to finish reading the page after the last line appears.

e. **SPLASH** makes the text appear one entire line at a time, starting at the top of the region. Each line remains on the screen as the other line appears below it. DISPLAY SPEED makes the lines appear at a slow, medium, or fast rate. Select a DISPLAY TIME that gives the viewer time to finish reading the page after the last line appears.

5. **DISPLAY SPEED.** This determines how fast the DISPLAY TYPE text moves. Press the SPACEBAR to select SLOW, MEDIUM, or FAST. See Figure 3-48.

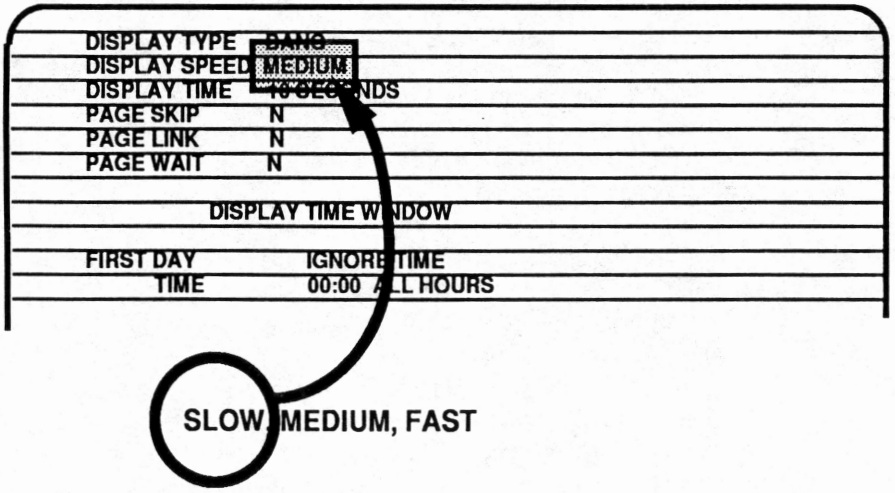


Figure 3-48. Display Speed Attribute.

6. **DISPLAY TIME.** This determines the page's on-screen time. Time may be selected from 00 to 98 seconds, or 99 seconds for a permanent hold that can be sequenced by an external device or line level. See Figure 3-49.

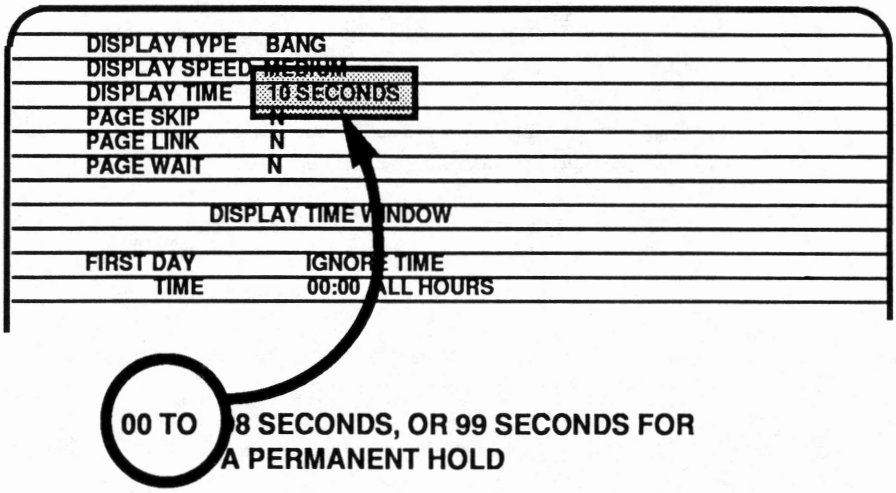

DISPLAY TYPE BANG
DISPLAY SPEED MEDIUM
DISPLAY TIME 10 SECONDS
PAGE SKIP N
PAGE LINK N
PAGE WAIT N
DISPLAY TIME WINDOW
FIRST DAY IGNORE TIME
TIME 00:00 ALL HOURS
00 TO 98 SECONDS, OR 99 SECONDS FOR A PERMANENT HOLD

Figure 3-49. Display Time Attribute.

PAGE PRINT, ROLL, and SPLASH pages require time to move their text onto the screen. Make the DISPLAY TIME for a text-move page exceed its text-move time, or it will vanish from the screen the instant the last character appears.

7. **PAGE SKIP.** This stops the display of the page. Entering "**Y**" for YES will make all SEQ menus skip the page. Entering "**N**" for NO makes the page available for display (for example: advertisements that are not scheduled to run until some time in the future). Use of Page Skip may change the normal sequencing of pages.

   NOTE: PAGE SKIP can not be used on LAST PAGE of a sequencing group.

8. **PAGE LINK.** This forms long pages by connecting three sequential eight-line memory pages. Entering "**Y**" for YES connects the

page in the edit buffer to the one below it (lower page number) in memory. Entering "N" for NO keeps the page independent. Use PAGE LINK to make the SpectraGen display more than eight lines of text in a region.

a. Each page of a linked set retains its individual appearance attributes (colors, character fonts and sizes, edging, and line separators).

   For Example: If you want blue as the background color of the set, you must call up and change each page to that color.

b. The display attributes of the first page apply to all pages of the linked set. Although you can still change the DISPLY ATTRIB menu for each page, only the lead page's menu has any effect.

c. You cannot do a NEXT PAGE when working on pages which are linked. You must recall individual pages.

9. **PAGE WAIT.** This stops the display of an external data (newswire) page unless new data was written into it since it was last displayed. Enter "Y" for YES to make the page wait for new text. Enter "N" to display the page regardless of content. Use of Page Wait may change the normal sequencing of pages.

10. **DISPLAY TIME WINDOW.** As shown in Figure 3-50, this function makes the page available for display only during specific times. When the time of day falls outside the window, the page will not display. When the time of day falls inside the window, the page can display unless other factors (such as PAGE WAIT, PAGE SKIP, or a low-priority position in a sequence file) interfere.

    The SpectraGen allows either once-per-week or once-per-day windows. A once-per-week window can start and end on the same day, or it can start on one day and end on another. A once-per-day window has the same starting and ending times every day of the week.

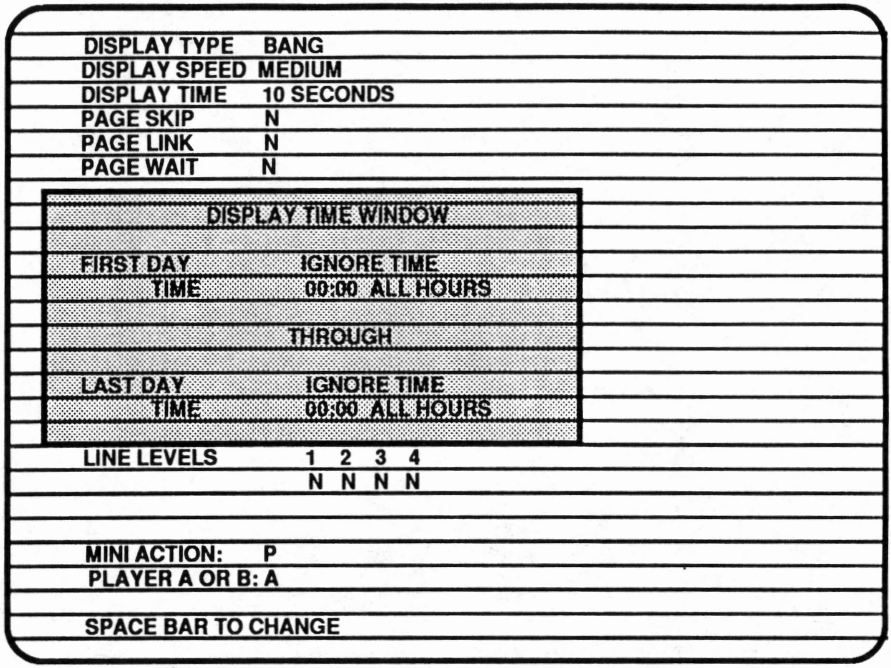


Figure 3-50. Display Time Window.

a. Use the SPACEBAR to make changes.

b. **FIRST** and **LAST DAY** define the window's opening and closing times. On this line you enter the **DAY** of the week, **ALL DAYS**, or **IGNORE TIME** which makes the pages available for display continuously.

c. **SUN** thru **SAT** defines the start and stop days of a once-per-week window. Repeat the day name in both blocks if the once-per-week window starts and ends on the same day. **ALL DAYS** sets up once-per-day windows.

d. **TIME** defines start and stop hours and minutes for either once-per-week or once-per-day windows. Enter **00** thru **12** hours, **00** thru **59** minutes, and **AM** or **PM** to exactly define the window.

e. Entering **00** hours opens the window for all hours of the day; entering **01** thru **12** hours opens and closes it at specific hours.

f. 12:00 AM is midnight; 12:00 PM is noon.

g. **THROUGH** means the time windows open at a specified starting time and runs THROUGH to the end of the specified closing minute.

   For Example: A page with a window set to close at 5:10 PM will actually be available for display until the clock changes to 5:11 PM.

h. The following illustrations show examples of DISPLAY TIME WINDOW for Continuous Window, Once-Per-Week Window, Once-Per-Day Window, and All-Hours Menu.

DISPLAY TIME WINDOW	
FIRST DAY	IGNORE TIME
TIME	00:00 ALL HOURS
-THROUGH-	
LAST DAY	IGNORE TIME
TIME	00:00 ALL HOURS

CONTINUOUS WINDOW - This menu will make its page available for display continuously.

DISPLAY TIME WINDOW	
FIRST DAY	MON
TIME	06:30 AM
-THROUGH-	
LAST DAY	THU
TIME	02:00 PM

ONCE-PER-WEEK WINDOW - This menu will make its page available for display starting at 6:30 AM Monday and ending at 2:01 Thursday. This window will repeat once each week.

DISPLAY TIME WINDOW	
FIRST DAY	ALL DAYS
TIME	12:00 PM
-THROUGH-	
LAST DAY	ALL DAYS
TIME	06:30 PM

ONCE-PER-DAY WINDOW - This menu will make its page available for display each day of the week starting at noon and ending at 6:31 PM,

DISPLAY TIME WINDOW	
FIRST DAY	MON
TIME	00:00 ALL HOURS
-THROUGH-	
LAST DAY	WEDS
TIME	00:00 ALL HOURS

ALL HOURS WINDOW - This menu will make its page available for display starting at 12:00 AM Monday and ending at 12:00 AM Thursday.

11. **LINE LEVELS.** The LINE LEVELS portion of the menu shows the states of the external equipment output control lines. Enter **H** to switch the line to HIGH, **L** to switch to LOW, **N** to leave it unchanged, and **P** to generate a 65 microsecond pulse. The pulse will step high from a low line and low from a high line.

    To set up an eternal equipment control cycle, first set the control lines to their starting high or low states manually with as above. Next set up a page (using Page Attributes) that changes the level that were selected in the LINE LEVEL Menu. Subsequent pages must be set up to restore the level to the original value if required. If a pulse is required, select the Pulse option to provide a negative pulse from a HIGH level or a positive pulse from a LOW level. The pulse width is 65 microseconds. The pulse option does not require a second page or event to reset the level.

    Finally, fill out a SEQ menu to make the text generator display the pages. The control lines will then step the external equipment through its operating cycle whenever the SEQ menu displays this series of pages.

EVENT

An EVENT is a function, that a specified time, prompts the SpectraGen to either replace any sequence file with a new file; insert a one-time page sequence into, but not instead of, the sequence currently running, or sends control signals to other equipment; initiates a BATCH TRANS.

When used with the SHIFT key, this key replaces the current on-screen event menu with the menu for the next higher-numbered event. When used with the ALT key, this key replaces the current on-screen event menu with the menu for the previous lower-numbered event.

The following is the procedure for EVENT.

1. Press the EDIT key to put the unit in the EDIT Mode, then press the EVENT key to bring up the event menu as shown in Figure3-51.

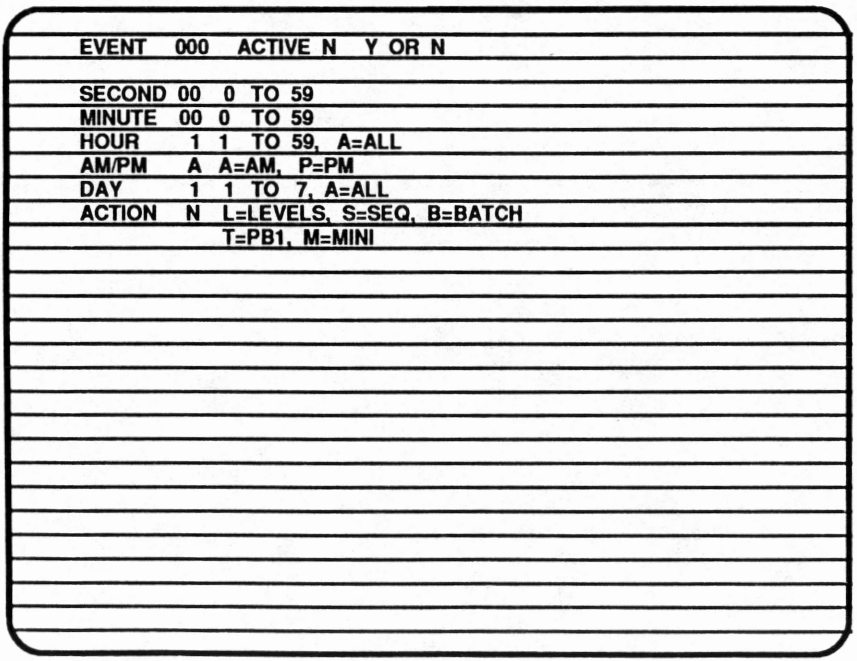

EVENT 000 ACTIVE N Y OR N
SECOND 00 0 TO 59
MINUTE 00 0 TO 59
HOUR 1 1 TO 59, A=ALL
AM/PM A A=AM, P=PM
DAY 1 1 TO 7, A=ALL
ACTION N L=LEVELS, S=SEQ, B=BATCH
T=PB1, M=MINI

Figure 3-51. EVENT Menu Display.

2. **SETTING EVENT TIME.**

Fill out the EVENT menu to describe selected time (or times) of the event as described per the following narrative:

a. **EVENT.** Enter any number from 000 to 510 to call up and modify an existing event menu or fill out a blank event menu. Press <ENTER> to select, and then press <ENTER> again to move the cursor.

b. **ACTIVE.** Enter **"Y"** for YES to make the event active, or enter **"N"** for NO to hold the event for future use. Press <ENTER>.

c. **SECOND.** This applies to 00 to 31 seconds. Press <ENTER>.

d. **MINUTE.** Enter the desired minute from 0 to 59. Press <ENTER>.

e. **HOUR.** Enter any number from 1 to 12 for a specific hour, or enter **"A"** for all 24-hours. Press <ENTER>.

f. **AM/PM.** If you chose **"A"** when entering HOUR, the cursor will skip AM/FM, otherwise enter the appropriate time and press <ENTER>.

g. **DAY.** Numbers **1** to **7** means **1=Sun, 2=Mon, 3=Tue, 4=Wed, 5=Thur, 6=Fri, 7=Sat.** **"A"** indicates **ALL** days. Press <ENTER>.

Time Examples:

TIMES WANTED	MENU/MENUS REQUIRED	
Thursday, 5:58 PM	MINUTE 58 0 TO 59 HOUR 5 1 TO 12, A=ALL AM/PM P A=AM, P=PM DAY 5 1 TO 7, A=ALL	
Hourly, at 39 minutes past the hour, on Monday.	MINUTE 39 0 TO 59 HOUR A 1 TO 12, A=ALL AM/PM A A=AM, P=PM DAY 2 1 TO 7, A=ALL	
Twice every hour, at 20 and 40 past the hour on Friday.	MINUTE 20 0 TO 59 HOUR A 1 TO 12, A=ALL AM/PM A A=AM, P=PM DAY 6 1 TO 7, A=ALL	MINUTE 40 0 TO 59 HOUR A 1 TO 12, A=ALL AM/PM A A=AM, P=PM DAY 6 1 TO 7, A=ALL

NOTE *Both action menus of the twice-hourly example must be filled out identically or different events will happen at 20 and 40 past the hour.*

2. **ACTION ENTRY FOR CHANGE/INSERT FILES.**

   Enter the desired action to control LEVEL LINES, SEQ, BATCH, PB1 or MINI.

3. **SEQ Action Entry.**

   a. Type "S" if you wish to bring up and change SEQ menus. Press <ENTER> and the following menu will appear as shown in Figure 3-52.

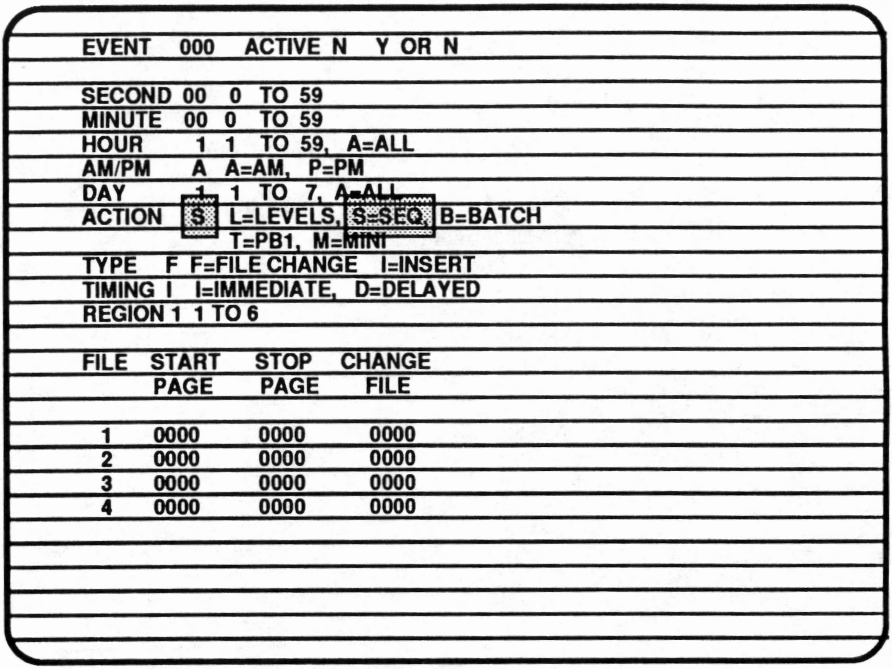

EVENT 000 ACTIVE N Y OR N
SECOND 00 0 TO 59
MINUTE 00 0 TO 59
HOUR 1 1 TO 59, A=ALL
AM/PM A A=AM, P=PM
DAY 1 1 TO 7, A=ALL
ACTION S L=LEVELS, S=SEQ B=BATCH
T=PB1, M=MINI
TYPE F F=FILE CHANGE I=INSERT
TIMING I I=IMMEDIATE, D=DELAYED
REGION 1 1 TO 6
FILE START PAGE STOP PAGE CHANGE FILE
1 0000 0000 0000
2 0000 0000 0000
3 0000 0000 0000
4 0000 0000 0000

Figure 3-52. Selecting SEQ Action Display. (CHANGE Files).

b. Type **"F"** to permanently change a region's sequence menu, or type **"I"** to insert a temporary one-time run of pages. Press <ENTER>, and the cursor will move to the TIMING line.

c. Type **"I"** to make the event (when it occurs) immediately interrupt the page on the screen, or type **"D"** to make the event interrupt after the two pages waiting in the display buffer have been displayed. Press <ENTER>, and the cursor will move to the REGION line.

d. Enter the number of the region that will run the new sequence file. This new file will permanently replace the old file for the region.

e. After you have entered the last entry, a prompt will appear at the bottom of the screen asking, **"STORE EVENT NUMBER 000"**, where 000 is the same as EVENT 000 in the first line. If you press <ENTER> the event number will be stored, and the cursor will return to EVENT 000 on the first line. To get out of the menu, press the EDIT key.

f. If you select **"I"** for INSERT on the TYPE line, the following menu will appear as shown in Figure 3-53.

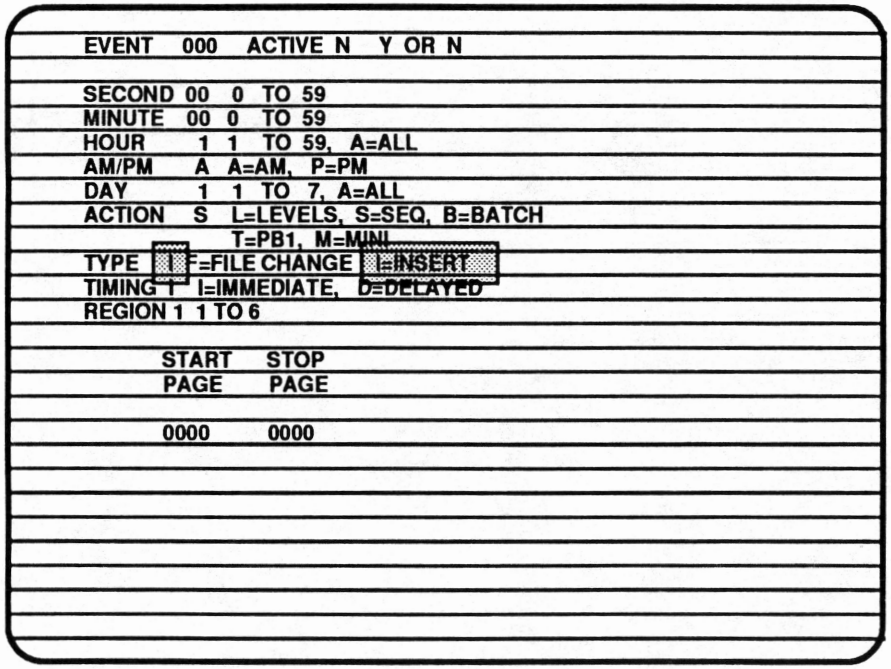

EVENT 000 ACTIVE N Y OR N
SECOND 00 0 TO 59
MINUTE 00 0 TO 59
HOUR 1 1 TO 59, A=ALL
AM/PM A A=AM, P=PM
DAY 1 1 TO 7, A=ALL
ACTION S L=LEVELS, S=SEQ, B=BATCH
T=PB1, M=MINI
TYPE I F=FILE CHANGE I=INSERT
TIMING I I=IMMEDIATE, D=DELAYED
REGION 1 1 TO 6
START PAGE
STOP PAGE
0000
0000

Figure 3-53. Selecting SEQ Action Display (INSERT Files).

g. Enter the TIMING, REGION, START and STOP pages.

h. After you have entered the last entry, a prompt will appear at the bottom of the screen asking, **"STORE EVENT NUMBER 000"**, where 000 is the same as EVENT 000 in the first line. If you press <ENTER> the event number will be stored, and the cursor will return to EVENT 000 on the first line. To get out of the menu, press the EDIT key.

4. **BATCH Action Entry.**

a. At the ACTION line, type **"B"** if you wish to bring up and change BATCH menus. Press <ENTER> and the following menu will appear as shown in Figure 3-54.

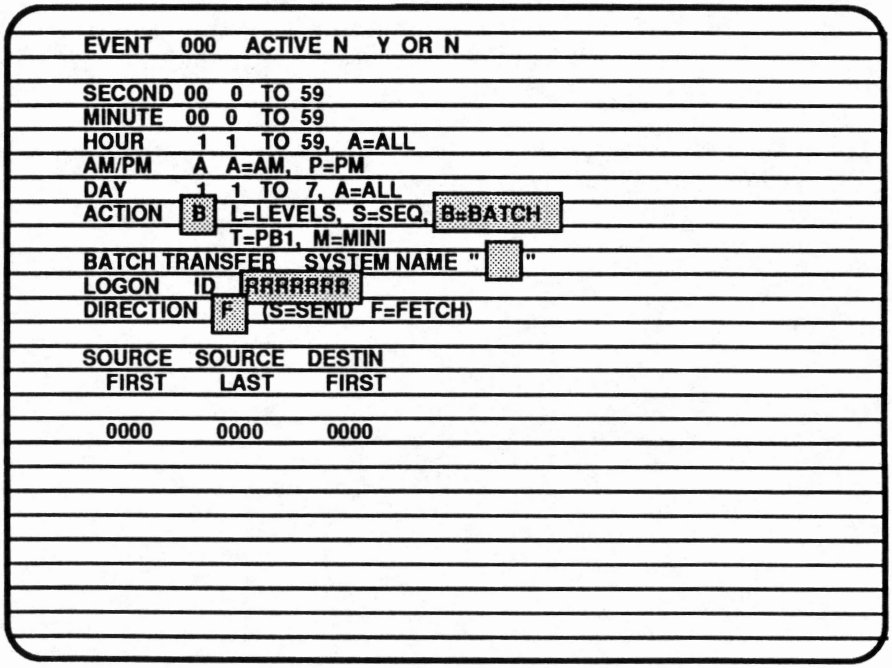

EVENT 000 ACTIVE N Y OR N
SECOND 00 0 TO 59
MINUTE 00 0 TO 59
HOUR 1 1 TO 59, A=ALL
AM/PM A A=AM, P=PM
DAY 1 1 TO 7, A=ALL
ACTION B L=LEVELS, S=SEQ, B=BATCH
T=PB1, M=MINI
BATCH TRANSFER SYSTEM NAME "
"
LOGON ID RRRRRRRR
DIRECTION F (S=SEND F=FETCH)
SOURCE SOURCE DESTIN
FIRST LAST FIRST
0000 0000 0000

Figure 3-54. Selecting BATCH Action Display.

b. Enter the batch transfer system name and press <ENTER>.

c. Enter the LOGON ID and press <ENTER>.

d. Enter **"S"** to SEND or **"F"** to FETCH the information. Press <ENTER>.

e. Enter the desired page number for SOURCE FIRST and press <ENTER>. Enter the desired page number for SOURCE LAST and press <ENTER>. Enter the desired page number for DESTIN FIRST and press <ENTER>.

f. After you have entered the last entry, a prompt will appear at the bottom of the screen asking, **"STORE EVENT NUMBER 000"**, where 000 is the same as EVENT 000 in the first line. If you press <ENTER> the event number will be stored, and the cursor will return to EVENT 000 on the first line. To get out of the menu, press the EDIT key.

NOTE *If using modems, be sure to set up the telephone numbers in order in the* ***To Enter Modem Telephone Numbers"*** *.* *See page 3-49.*

5. **PB1 Action Entry.**

   a. At the ACTION line type **"T"** if you wish to bring up and change PB1 menus. Press <ENTER> and the following menu will appear as shown in Figure 3-55.

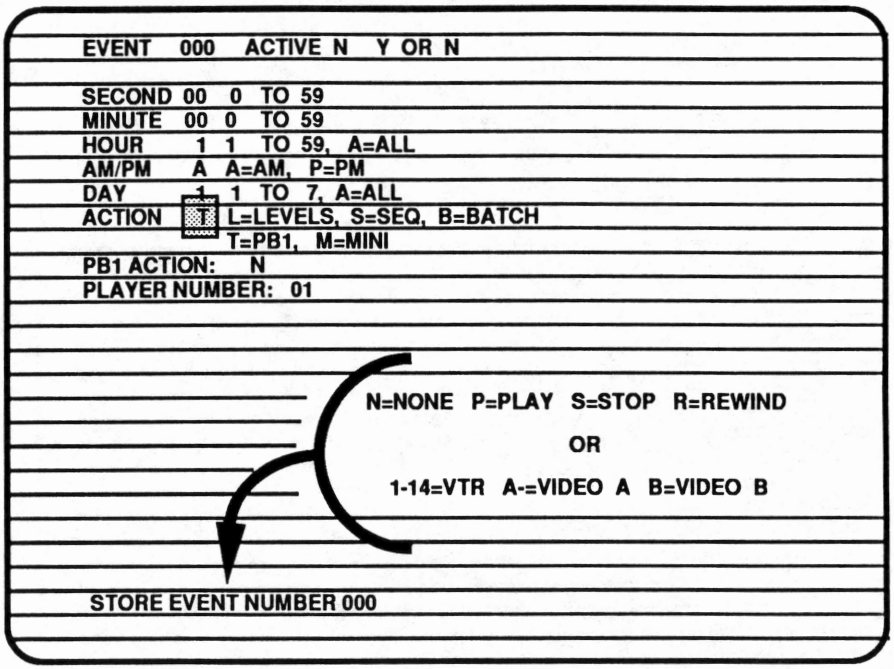

EVENT 000 ACTIVE N Y OR N
SECOND 00 0 TO 59
MINUTE 00 0 TO 59
HOUR 1 1 TO 59, A=ALL
AM/PM A A=AM, P=PM
DAY 1 1 TO 7, A=ALL
ACTION T L=LEVELS, S=SEQ, B=BATCH
T=PB1, M=MINI
PB1 ACTION: N
PLAYER NUMBER: 01
N=NONE P=PLAY S=STOP R=REWIND
OR
1-14=VTR A-=VIDEO A B=VIDEO B
STORE EVENT NUMBER 000

Figure 3-55. Selecting PB1 Action Display.

   b. At the PB1 ACTION line enter the desired action, such as: N for NO, P for PLAY, S for STOP or R for REWIND. Press <ENTER>.

   c. At the PLAYER NUMBER line enter the desired number, such as: 1-14 for VTR (Video Tape Recorder), A for Video A, or B for Video B. Press <ENTER>.

d. After you have entered the last entry, a prompt will appear at the bottom of the screen asking, **"STORE EVENT NUMBER 000"**, where 000 is the same as EVENT 000 in the first line. If you press <ENTER> the event number will be stored, and the cursor will return to EVENT 000 on the first line. To get out of the menu, press the EDIT key.

6. **MINI Action Entry.**

a. At the ACTION line type **"M"** if you wish to bring up and change MINI menus. Press <ENTER> and the following menu will appear as shown in Figure 3-56.

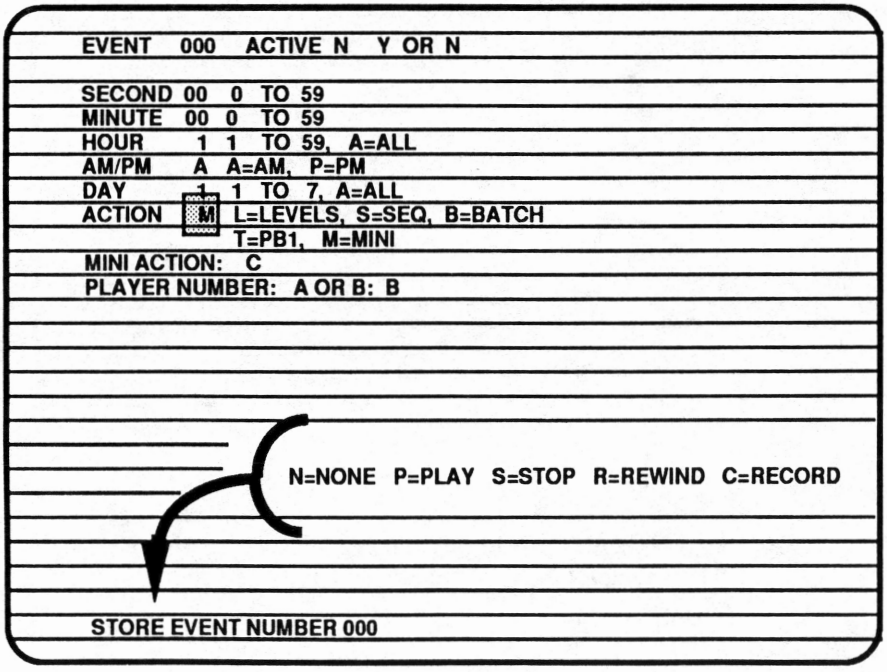

EVENT 000 ACTIVE N Y OR N
SECOND 00 0 TO 59
MINUTE 00 0 TO 59
HOUR 1 1 TO 59, A=ALL
AM/PM A A=AM, P=PM
DAY 1 1 TO 7, A=ALL
ACTION M L=LEVELS, S=SEQ, B=BATCH
T=PB1, M=MINI
MINI ACTION: C
PLAYER NUMBER: A OR B: B
N=NONE P=PLAY S=STOP R=REWIND C=RECORD
STORE EVENT NUMBER 000

Figure 3-56. Selecting MINI Action Display.

b. At the MINI ACTION line enter the desired action such as: N for NONE, P for PLAY, S for STOP, R for REWIND, or C for RECORD. Press <ENTER>.

c. At the PLAYER NUMBER line enter the desired number such as: A for Video A, or B for Video B. Press <ENTER>>

d. After you have entered the last entry, a prompt will appear at the bottom of the screen asking, **"STORE EVENT NUMBER 000"**, where 000 is the same as EVENT 000 in the first line. If you press <ENTER> the event number will be stored, and the cursor will return to EVENT 000 on the first line. To get out of the menu, press the EDIT key.

7. **LEVEL Action Entry.**

   a. At the ACTION line type "**L**" if you wish to bring up and change LEVEL menus. Press <ENTER> and the following menu will appear as shown in Figure 3-57.

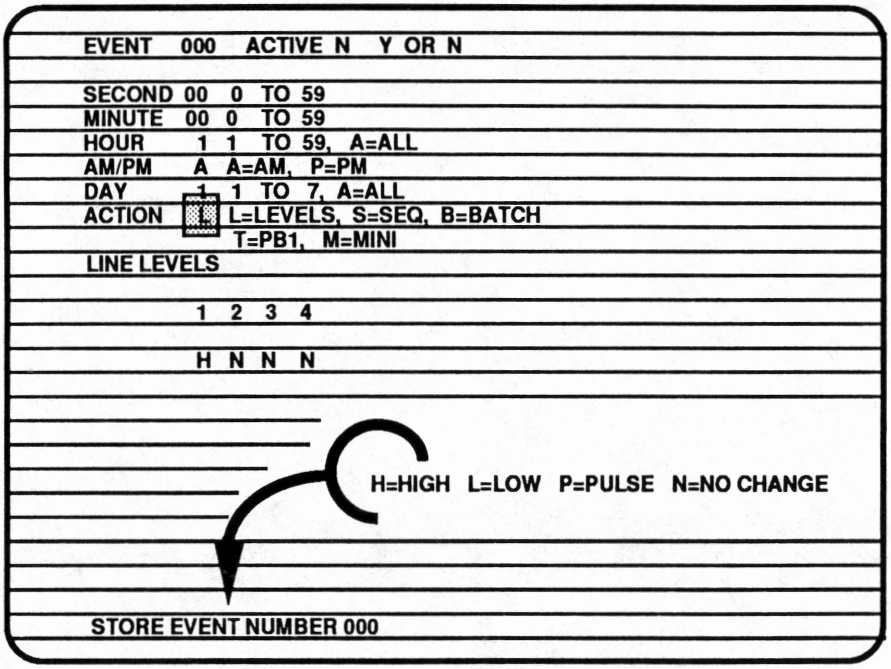

EVENT 000 ACTIVE N Y OR N
SECOND 00 0 TO 59
MINUTE 00 0 TO 59
HOUR 1 1 TO 59, A=ALL
AM/PM A A=AM, P=PM
DAY 1 1 TO 7, A=ALL
ACTION L=LEVELS, S=SEQ, B=BATCH
T=PB1, M=MINI
LINE LEVELS
1 2 3 4
H N N N
H=HIGH L=LOW P=PULSE N=NO CHANGE
STORE EVENT NUMBER 000

Figure 3-57. Selecting LEVEL Action Display.

   b. At levels, enter "**H**" to switch the line high, "**L**" for low, "**P**" to generate a 65 microsecond pulse (the pulse will step high from a low line and low from a high line, to be set in the line level menu using the LINE LEVEL key - see page 3-96), "**N**" to leave it unchanged. Press <ENTER> after each entry.

c. After you have entered the last entry, a prompt will appear at the bottom of the screen asking, **"STORE EVENT NUMBER 000"**, where 000 is the same as EVENT 000 in the first line. If you press <ENTER> the event number will be stored, and the cursor will return to EVENT 000 on the first line. To get out of the menu, press the EDIT key.

d. **How to Set Up an External Equipment Control Cycle.**

- Set the external equipment control lines to starting high or low states either manually with the LEVEL key (see LINE LEVEL function), automatically at a selected time with an event, or automatically with the appearance of a particular page (see DISPLY ATTRIB function).

- Set up a series of events that will switch the lines as required at selected times. The control lines will then step the external equipment through its operating cycle as the event times occur.

FLASH

Makes text flash in inserting a hidden control character in the space before and after a word, or words. A single flash character will make the rest of the line flash. Flash works best with BANG, ROLL, and SPLASH pages, and moderately well with PAGE PRINT pages. Do not use the flash attribute with CRAWL pages. Erase the flash character by pressing the SPACEBAR while the cursor is over the hidden character.

KEYBRD DIRECT (Keyboard Direct)

Allows a local unit to directly access the menus and pages of a remote unit. The video display must be seen from the remote unit's video outputs. (Also see REMOTE EDIT.)

KEYBRD DIRECT substitutes the local SpectraGen's keyboard for the keyboard of the remote SpectraGen. KEYBRD DIRECT makes all menus and pages in the remote unit available for alteration from the local unit, unless the remote unit's LIMIT REMOTE ACCESS menu (refer to ACCESS CODES description) prohibits access. KEYBRD DIRECT interrupts the automatic operation of the remote unit.

The BREAK key is used with KEYBRD DIRECT to immediately disconnect the KEYBRD DIRECT data connection with another SpectraGen.

To directly control a remote unit from your local keyboard, follow the procedures outlined:

1. Press the EDIT key to put the unit in the EDIT Mode. Then press the KEYBRD DIRECT key, and the screen will appear as shown in Figure 3-58.

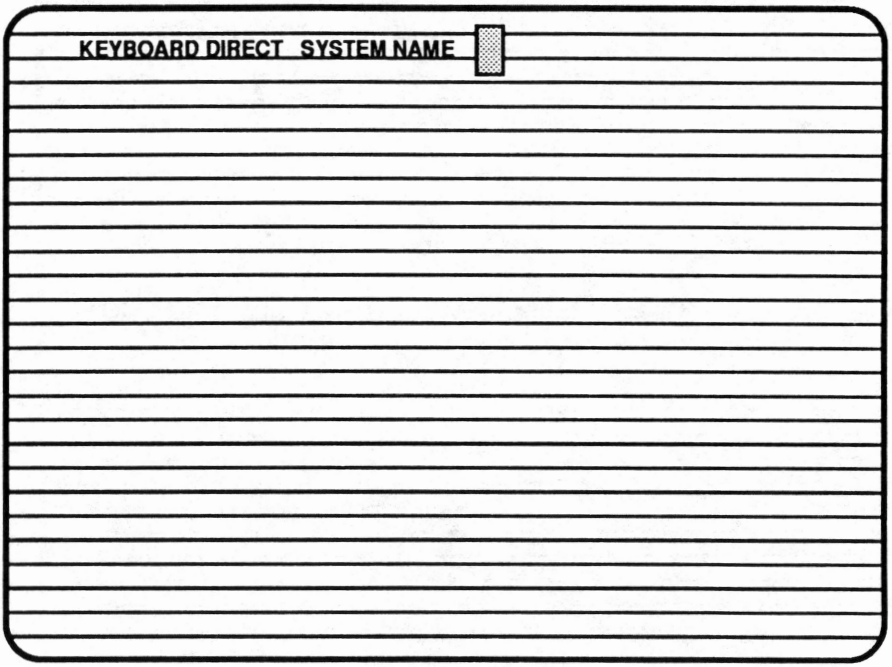


Figure 3-58. Keyboard Direct Menu Display.

2. Type in the channel name of the remote system as shown in Figure 3-59. If you type the incorrect name just type the correct name over it. The system name must agree with the remote system name.

NOTE *The name is case sensitive; that is a lower case "a" is different from an upper case "A".*

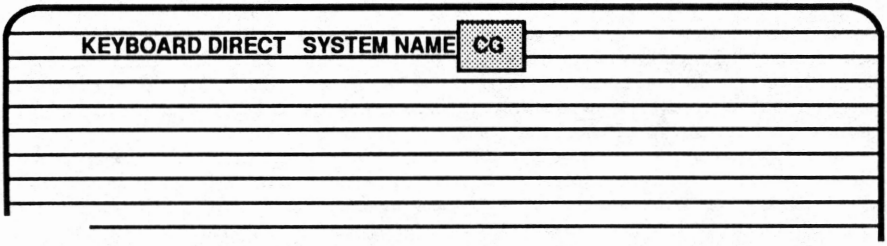


Figure 3-59. Typical Keyboard Direct System Name Display.

3. Press <ENTER> and the screen will appear requesting a LOGON ID as shown in Figure 3-60.

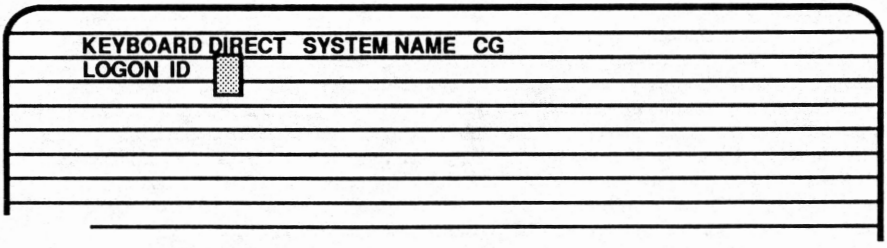


Figure 3-60. LOGON ID Request Display.

NOTE *If the remote system does not have its LIMIT REMOTE ACCESS menu filled out, the prompt "ON LINE" will appear instead of "LOGON ID" as shown in Figure 3-61.*

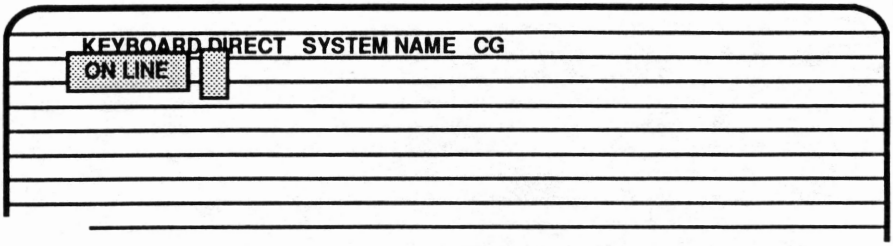


Figure 3-61. ON LINE Display.

4. As shown in Figure 3-62, type the ACCESS code that identifies you to the remote system.

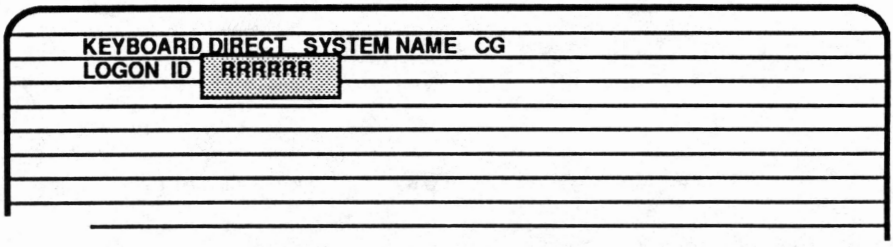


Figure 3-62. Typical LOGON ID Display.

5. Press <ENTER>.

NOTE *If the remote unit's LIMIT REMOTE ACCESS menu does not allow direct keyboard access for your code, or if the system name does not agree with any of the SpectraGen's connected to the system, "NO ACCESS" will appear instead of "ON LINE" as shown in Figure 3-63.*

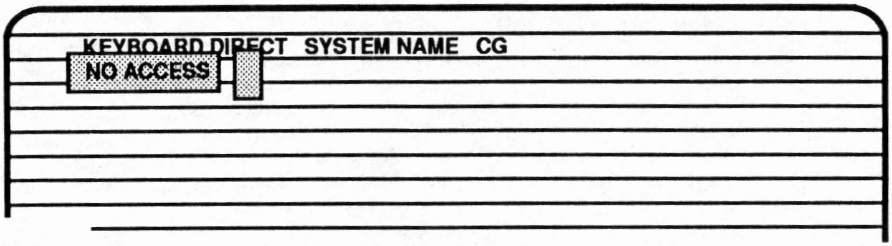


Figure 3-63. NO ACCESS Display.

6. Make sure your access menu and system name are applied correctly. Once this has been done the local keyboard now controls the remote system. The KEYBRD DIRECT menu will stay on the local screen and the cursor will flash continuously while you operate the remote system.

7. Press the EDIT key, then change the pages and menus of the remote system as required.

   The remote unit changes from the display to the edit mode and its video displays the pages and menus you bring into the edit buffer for change.

8. Press the RESUME DISPLY key, and the remote unit will resume its automatic programming.

9. If you wish to disconnect the KEYBRD DIRECT data connection with another SpectraGen, press the BREAK key. The screen will appear with the prompt **"OFF LINE"** as shown in Figure 3-64.

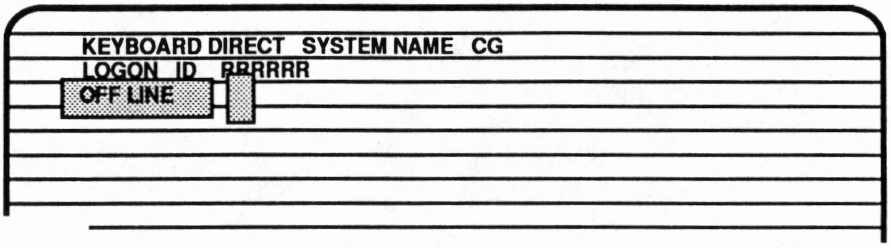


Figure 3-64. Use of BREAK Key Display.

10. Press the EDIT key or any letter key to continue with local operation. The KEYBRD DIRECT menu will disappear.

NOTE *After 10-seconds, "+++ATHO" will appear on the screen because of modems that may be connected.*

LINE LEVEL

The LINE LEVEL settings control the TTL logic outputs. This key rotates through the three settings: No Change, High, or Low. LINE LEVEL is used as a control switch on external equipment.

The LINE LEVEL key is one of three keys that operate the external equipment input/output control lines. This is a high going low transition. The other two keys being DISPLY ATTRIB and EVENT. The output lines let the SpectraGen control external equipment; the input lines let the SpectraGen control the SpectraGen. (Refer to DISPLY ATTRIB on page 3-70, and EVENT on page 3-78.)

Output Control Lines. External equipment provided by the customer can be controlled by the SpectraGen. This operates the equipment at the appearance of certain pages (DISPLY ATTRIB key), at specific times (EVENT key), or under direct keyboard control by the operator (LINE LEVEL key).

Input Control Lines. External equipment provided by the customer that controls the SpectraGen. The equipment sends control signal to the SpectraGen; these signals can change pages or reset page sequences in any region, depending on instructions in the LINE LEVEL menu.

The following is the procedure for LINE LEVEL.

1. Press the EDIT key to put the unit in the EDIT Mode. Then press the LINE LEVEL key, and the screen will appear as shown in Figure 3-65.

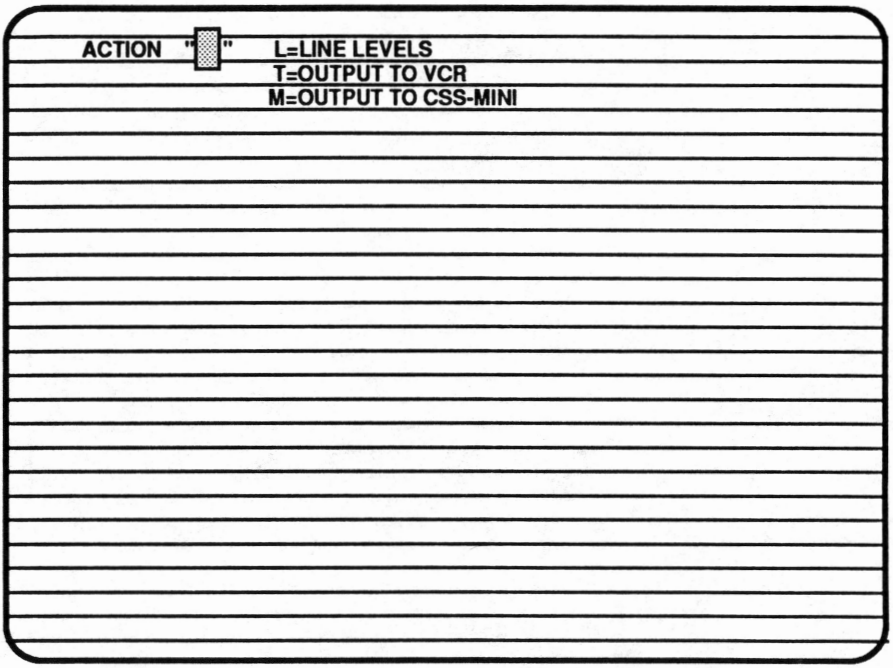


Figure 3-65. LINE LEVEL Action Select Menu.

2. Press the **"L"** key and then <ENTER> to bring up the LINE LEVEL menu as shown in Figure 3-66.

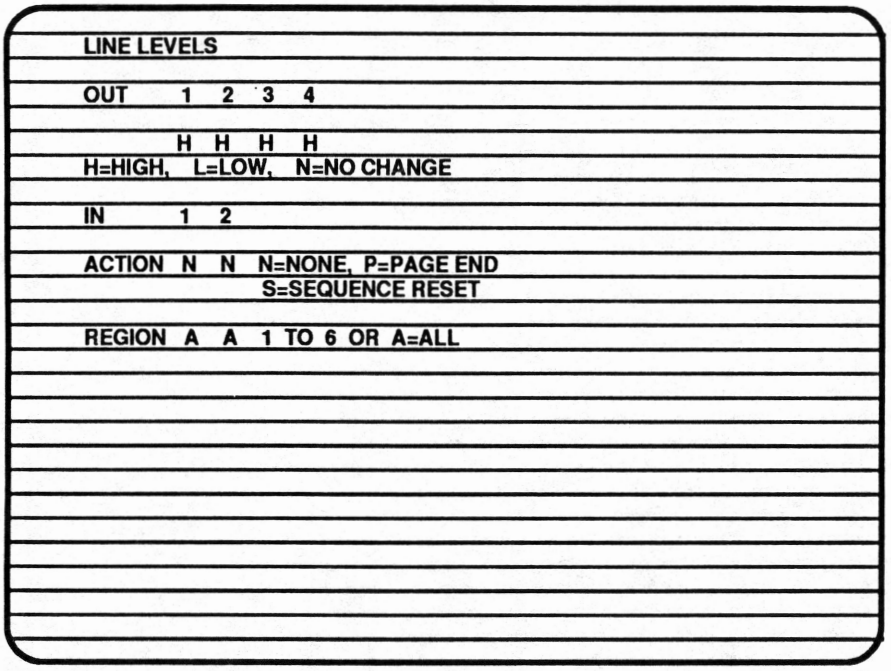


Figure 3-66. LINE LEVEL Menu.

3. At OUT LINE LEVELS enter **"H=HIGH"**, **"L=LOW"**, or **"N=NO CHANGE"** to test the operation of equipment connected to the SpectraGen.

   a. Press **"H"** and then <ENTER> to switch the line from low to high. The line will switch when you store the LEVEL menu.

   b. Press **"L"** and then <ENTER> to switch the line from high to low. The line will switch when you store the LEVEL menu.

c. Press "N" and then <ENTER> to leave the line unchanged in its present state.

4. At the IN ACTION line enter **"N=NONE, P=PAGE END,** or **S=SEQUENCE RESET".**

   a. Enter **"N"** to disable input control signals that any equipment is sending to the SpectraGen.

   b. Enter **"P"** to make any input cause the unit to step to the next page in the sequence.

   c. Enter **"S"** to make the input cause the unit to reset the sequence to the first page.

5. At the REGION line enter the number of the region that the input signal will control.

LINE SEP (Line Separation)

This key places a thin line under or over an entire line of text. Place the cursor on the line in which the separator should appear, then press the LINE SEP key to draw the line. Press the LINE SEP key again to remove the line. When used with the ALT key, an underline will appear under all lines on a page. When used with the SHIFT key, a line will appear over the line of text in which the cursor appears. When used with the CTRL key, a line will appear over all lines on a page.

NOTE *If a line does not appear, press the CTRL key, and the color will appear to see the line.*

PAGE COPY

Copies a page or a block of pages from a specified location in page memory into another specified location in page memory.

The following is procedures for using Page Copy:

1. Press the EDIT key to put the unit in the Edit Mode. Press the RECALL key and the screen will appear as shown in Figure 3-67, with the flashing cursor over the page number.

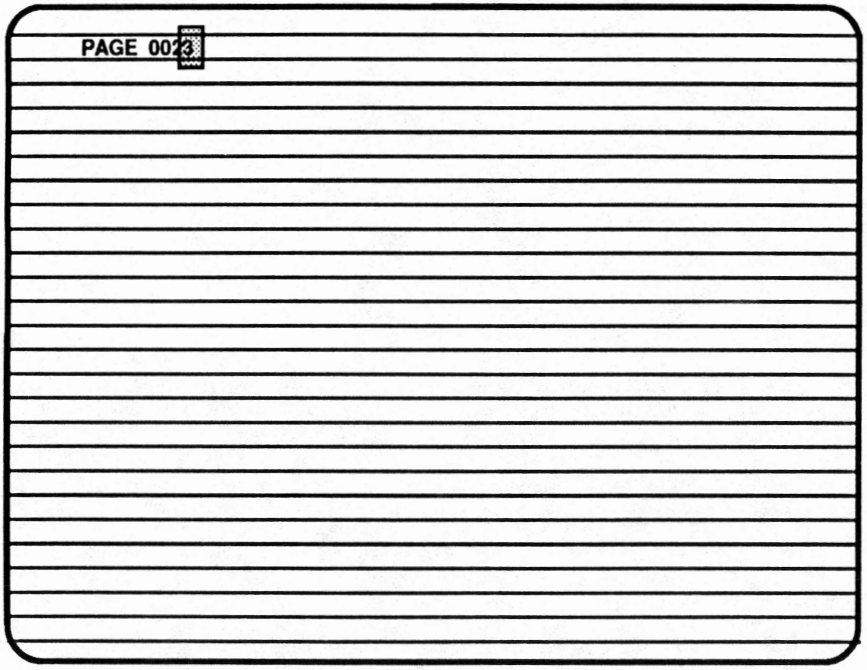


Figure 3-67. Page Recall Display.

2. Type the page or pages you wish to review and copy, and press <ENTER>. The page you selected will appear on the screen.

3. Hold down the CTRL key and press the PAGE COPY key. The screen will appear as shown in Figure 3-68.

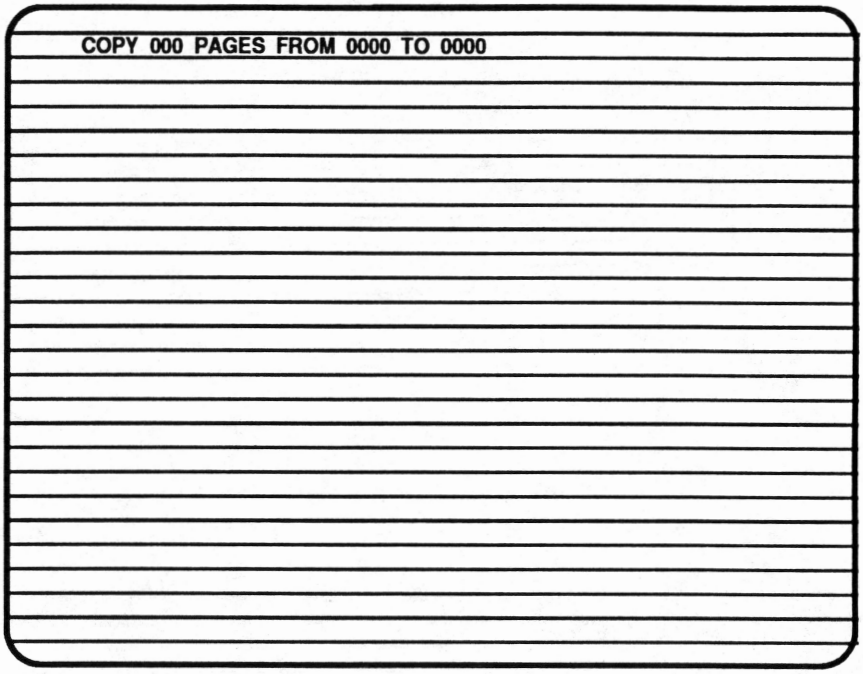


Figure 3-68. Page(s) to be Copied Display.

NOTE *The following examples represent copying five (5) page starting at page 23 and ending at page 27, and copying through to pages 50 thru 54.*

4. Type **"5"** for five pages. Press <ENTER> to move the cursor to **"0000"**, and type **"23"**. Press <ENTER> to move the cursor to the next **"0000"**, and type **"50"** to copy the contents of page 23 to 50. The screen should look as shown in Figure 3-69.

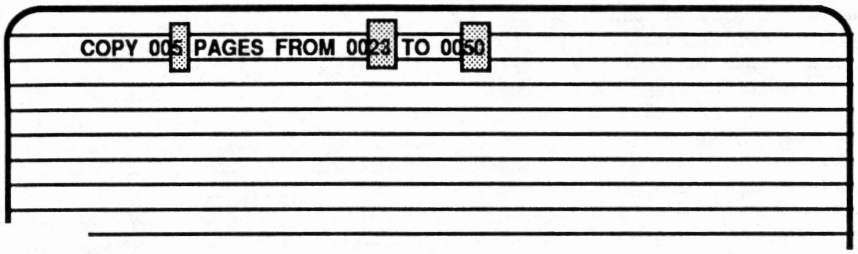


Figure 3-69. Page(s) Copy Entry Display.

5. Press <ENTER> and the screen will appear as shown in Figure 3-70 indicating that the PAGE COPY has been completed.

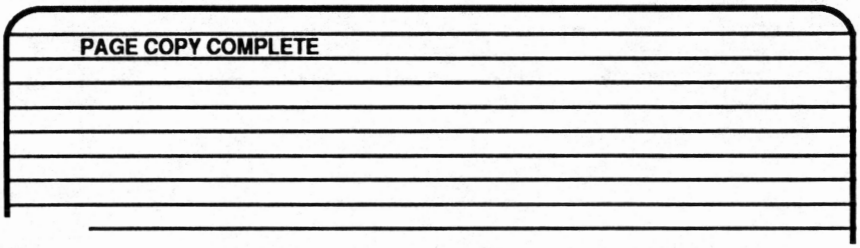


Figure 3-70. Page Copy Completed Display.

NOTE *This will copy pages 23 thru 27 to 50 thru 54.*

6. You must now sequence the pages to allow the messages to appear on the monitor in the order you have specified. (Refer to "Sequencing The Pages" on page 3-37.)

7. When you are satisfied that this procedure has been completed, press RESUME DISPLY to enter the display mode. You can watch your message(s) on the monitor screen, and also verify that they are being displayed the way you want them displayed.

REMOTE EDIT

Gives the local unit the ability to view and modify menus and pages of a remote unit. These menus and pages are edited in the local edit buffer. The remote unit continues automatic operation during remote editing. Remote menus are in red to let you know you are in remote operation.

The REMOTE EDIT key allows you to edit a remote SpectraGen with your local keyboard, edit buffer, and screen. Each remote edit operation has three basic steps:

a. Recall the remote menu or page.

b. Modify the menu or page as required.

c. Store the changed menu or page.

d. The BREAK key will disconnect the remote unit and return the local unit to the regular edit mode.

NOTE *Remote editing does not lock out the keyboard of the remote SpectraGen. Make sure that someone is not editing the remote unit from its keyboard at the same time you are editing it from your keyboard.*

NOTE *The Customer Menu Options cannot be accessed from Remote Edit, as described starting on page 3-44.*

To put your local text SpectraGen into REMOTE EDIT, and to call up a remote unit for editing, follow the outlined procedures.

1. Press the EDIT key to put the unit in the EDIT Mode. Then press the REMOTE EDIT key, and the screen will appear as shown in Figure 3-71.

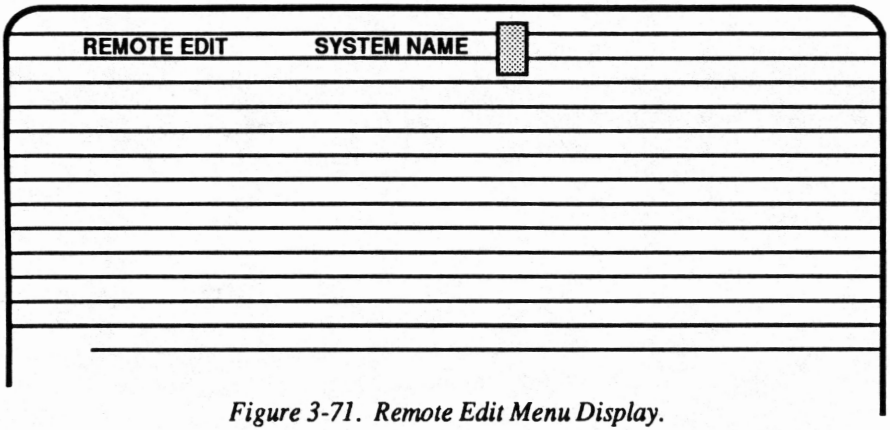


Figure 3-71. Remote Edit Menu Display.

2. Type in the channel name of the remote system as shown in Figure 3-72. If you type the incorrect name, just type the correct name over it. The system name must agree with the keyboard direct system name.

NOTE *The name is case sensitive; that is a lower case "a" is different from an upper case "A".*

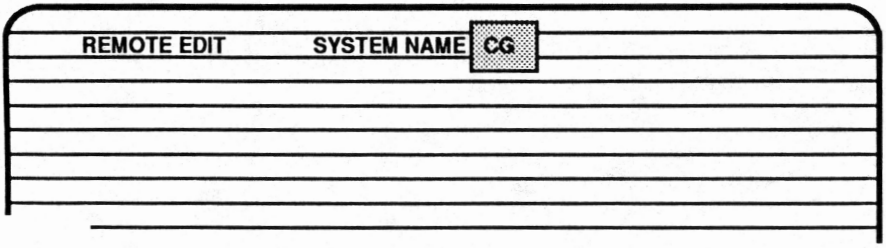


Figure 3-72. Typical Remote Edit System Name Display.

3. Press <ENTER> and the screen will appear requesting a LOGON ID as shown in Figure 3-73.

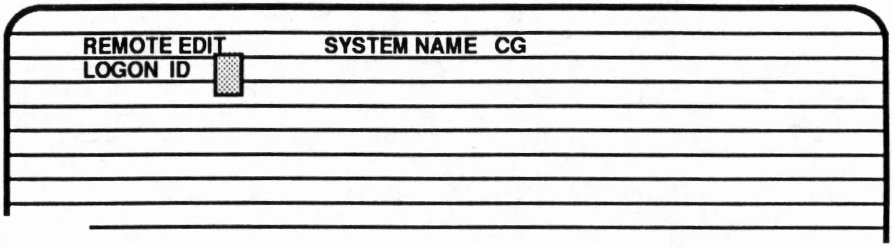


Figure 3-73. LOGON ID Request Display.

NOTE *If the remote system does not have its LIMIT REMOTE ACCESS menu filled out, "ON LINE" will appear as shown in Figure 3-74.*

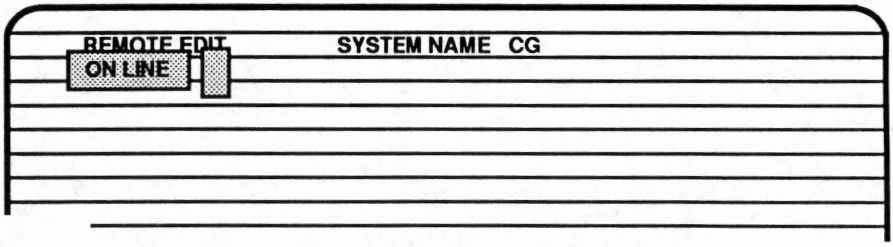


Figure 3-74. ON LINE Display.

4. As shown in Figure 3-75, type the ACCESS code that identifies you to the remote system.

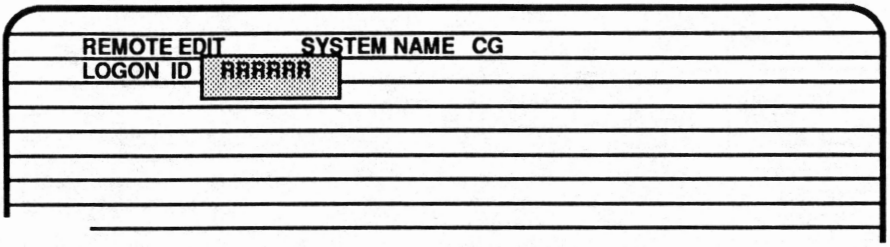


Figure 3-75. Typical LOGON ID Display.

5. Press <ENTER>.

NOTE *If the remote unit's LIMIT REMOTE ACCESS menu does not recognize your code, or if the system name does not agree with any of the SpectraGen's connected to the system, "NO ACCESS" will appear instead of "ON LINE" as shown in Figure 3-76.*

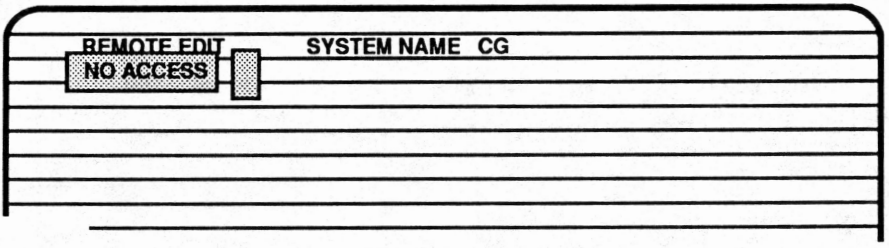


Figure 3-76. NO ACCESS Display.

6. Make sure your access menu and system name are applied correctly. Once this has been done, the local unit will be in the REMOTE EDIT.

7. Press the EDIT key, then change the pages and menus of the remote SpectraGen.

   The remote unit will continue automatic operation. The menus and pages you change in the local edit buffer will become effective in the remote unit only when you store them there.

8. Press the RESUME DISPLY key, and the remote unit will resume its automatic programming.

9. If you wish to disconnect the REMOTE EDIT, press the BREAK key. The screen will appear with the prompt **"OFF LINE"** as shown in Figure 3-77.

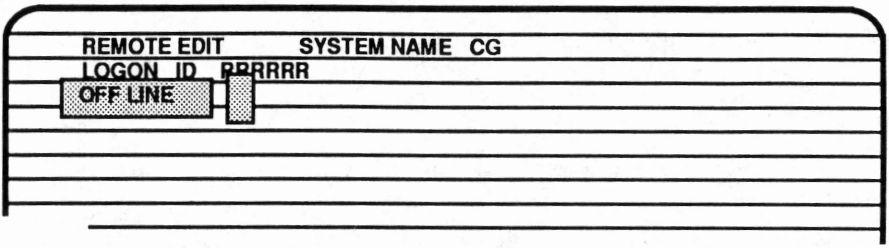


Figure 3-77. Use of BREAK Key Display.

10. Press the EDIT key or any letter key to continue with local operation.

NOTE *After 10-seconds,* ***"+++ATHO"*** *will appear on the screen because of modems that may be connected.*

SET PAGE

SET PAGE copies the attributes and text of the page from the edit buffer (on screen) to selected pages in the page memory.

Rather than individually setting the attributes page by page, give the edit buffer the attributes you want, then use SET PAGE to copy that page and its attributes into the block of memory pages.

NOTE *Do not use SET PAGE to change the attributes of an old block of pages with varying text, because SET PAGE also copies the text of the edit buffer page.*

Use SET PAGE to save typing time. If a new block of pages will have common text along with text that changes from page to page, type the common text once in the edit buffer, then SET PAGE copy it out to the block of memory pages. Finally, call up each page individually and type in only the changing material.

Make sure that the edit buffer page is set up exactly the way you want it. SET PAGE will copy every characteristic of that page to memory, including text (or lack of text), flashing, all colors, line separators, heights, widths, edging, display type-speed-time, page skip-link-wait, and display time windows.

The procedure for **SET PAGE**, when assigning common page attributes to a new block of pages, is as follows:

1. Press the EDIT key to put the unit in the EDIT Mode. (The screen will appear with what is in the Edit Buffer.)

2. Press the RECALL key and select the page to be copied.

   For this exercise we will recall a previously stored page **"23"** (see page 3-31), which was used in the previous exercise outlined in the WEEKLY/DAILY OPERATION EXAMPLE.

3. Press <ENTER> and the screen will appear with the previously stored page display as shown in Figure 3-78.

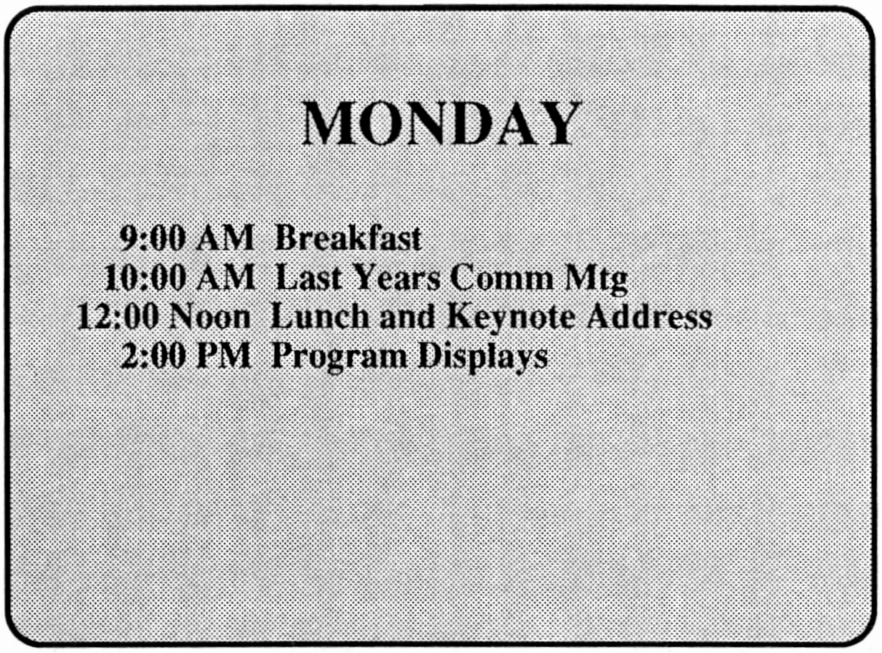


Figure 3-78. Common Text Page for SET PAGE Display.

4. Hold down the CTRL key and press the SET PAGE key. The screen will appear with a flashing cursor as shown in Figure 3-79.

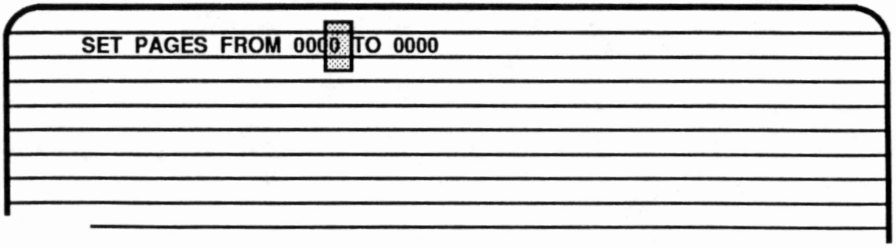


Figure 3-79. Pages to be Set for SET PAGE Request.

5. As shown in Figure 3-80, type **29** as the first page of the memory page block and press <ENTER> to move the cursor. Type **33** as the last page of the memory page block.

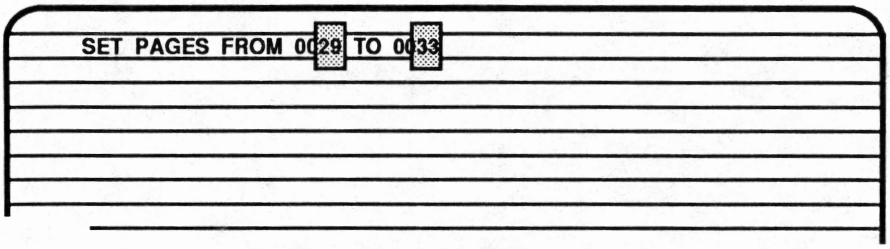


Figure 3-80. Pages to be Set for SET PAGE.

6. Press <ENTER> and the prompt MEMORY SET will appear on the screen as shown in Figure 3-81.

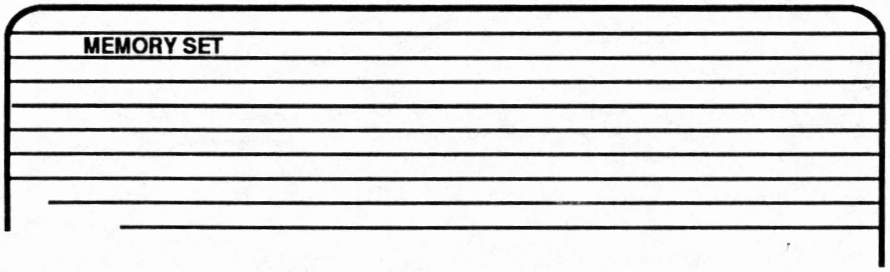


Figure 3-81. Memory Set Display.

7. Recall page 29 and press <ENTER>. The screen will appear exactly as the previous edit buffer with all attributes. As shown in Figure 3-82 modify the highlighted text (Booth Display). Center, adjust the height and width, and select a pleasing background color. Press DISPLY ATTRIB; select SPLASH, MEDIUM, and 10 SECONDS, then press <ENTER> repeatedly to exit the menu. Press the STORE key and then <ENTER> to store the page. Press the RECALL key and <ENTER> to verify its contents.

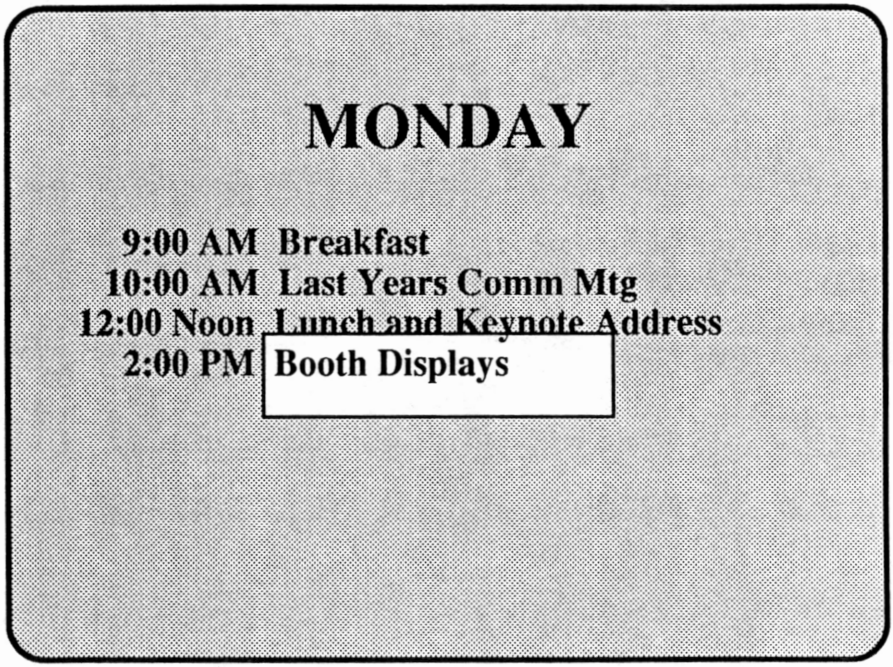


Figure 3-82. MONDAY Screen Display.

8. Recall page 30 and press <ENTER>, or press the NEXT PAGE key. The screen will appear exactly as the previous edit buffer with all attributes. As shown in Figure 3-83 modify the highlighted text (TUESDAY, Reports, Lunch, and Nominate Officers). Select a pleasing background color (different from the preceding page color). Press the STORE key and then <ENTER> to store the page. Press the RECALL key and <ENTER> to verify its contents.

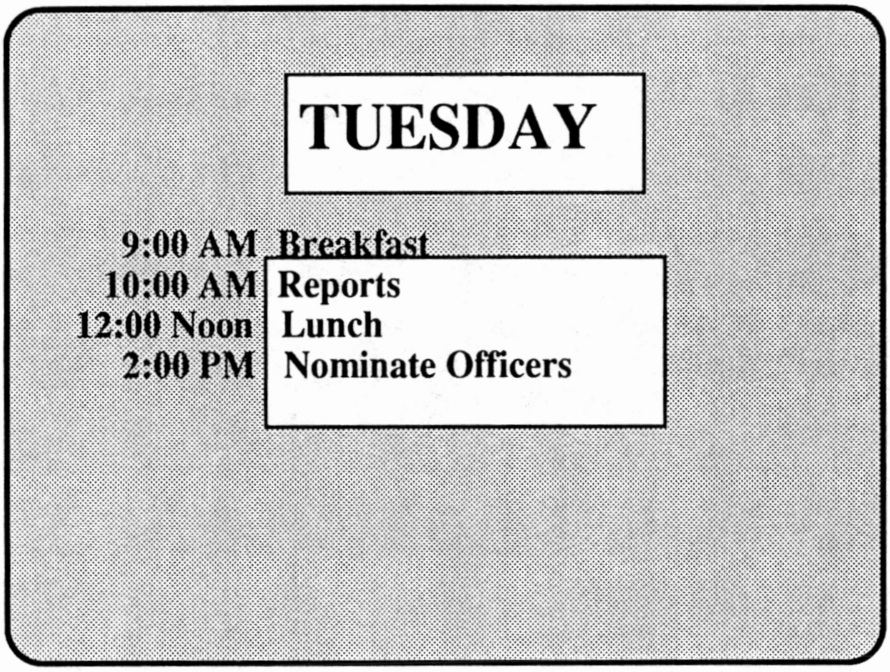


Figure 3-83. TUESDAY Screen Display.

9. Recall page 31 and press <ENTER>, or press the NEXT PAGE key. The screen will appear exactly as the previous edit buffer with all attributes. As shown in Figure 3-84 modify the high lighted text (WEDNESDAY, Committee Members Speak, Lunch, and Elect Officers). Select a pleasing background color (different from the preceding page color). Press the STORE key and then <ENTER> to store the page. Press the RECALL key and <ENTER> to verify its contents.

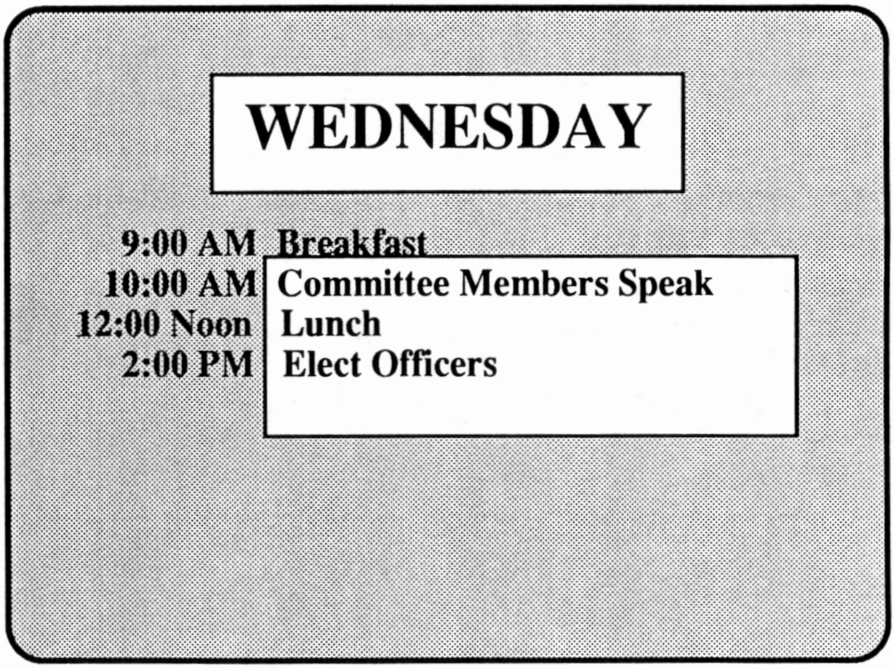


Figure 3-84. WEDNESDAY Screen Display.

10. Recall page 32 and press <ENTER>, or press the NEXT PAGE key. The screen will appear exactly as the previous edit buffer with all attributes. As shown in Figure 3-85 modify the high lighted text (THURSDAY, Election Results, Lunch, and Assignments & Meetings). Select a pleasing background color (different from the preceding page color). Press the STORE key and then <ENTER> to store the page. Press the RECALL key and then <ENTER> to verify its contents.

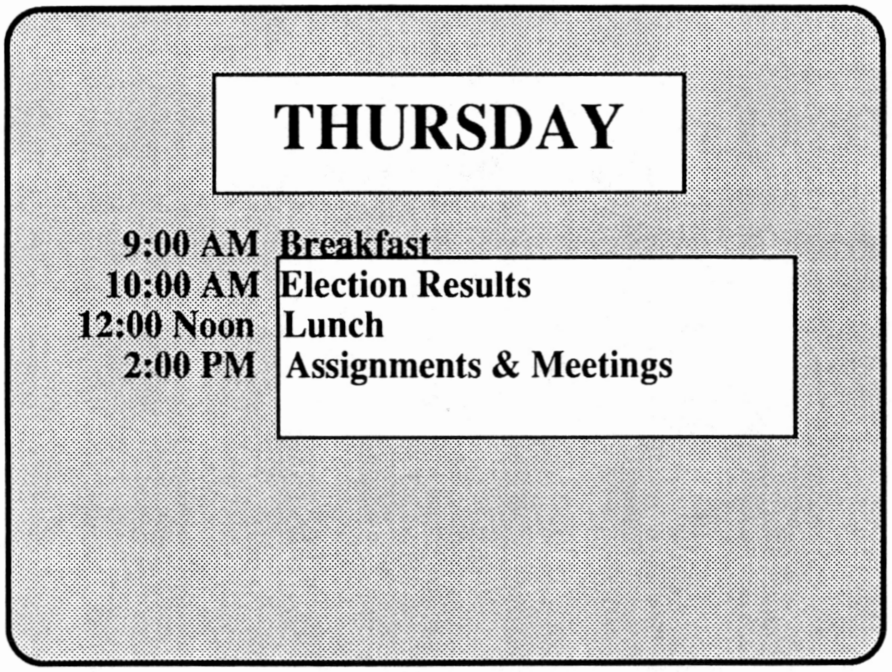


Figure 3-85. THURSDAY Screen Display.

11. Recall page 33 and press <ENTER>, or press the NEXT PAGE key. The screen will appear exactly as the previous edit buffer with all attributes. As shown in Figure 3-86 modify the highlighted text (FRIDAY, Committee Members Speak, Lunch, and Travel). Select a pleasing background color (different from the preceding page color). Press the STORE key and then <ENTER> to store the page. Press the RECALL key and <ENTER> to verify its contents.

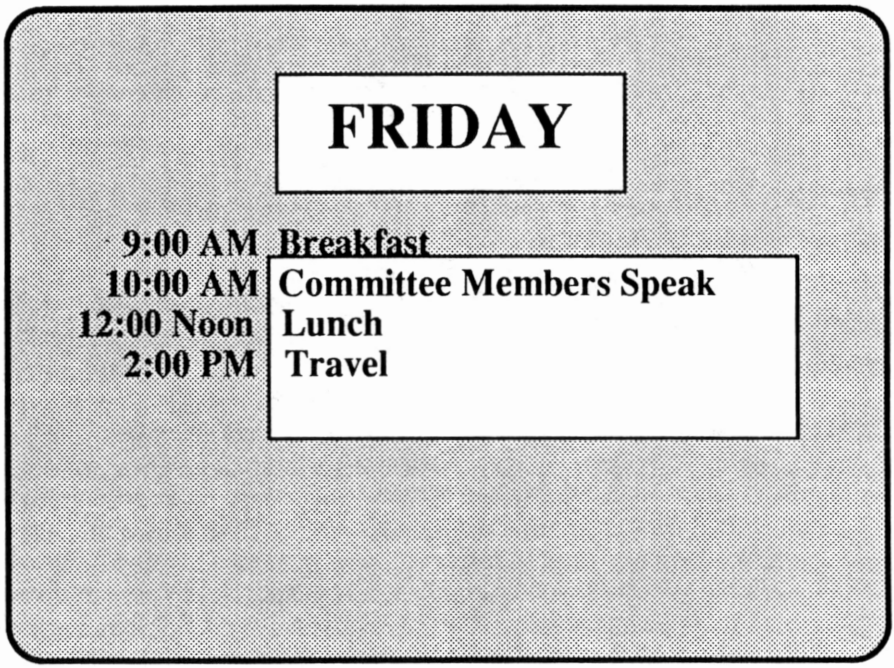


Figure 3-86. FRIDAY Screen Display.

12. You must now sequence the pages to allow the messages you have created to appear on the monitor in the order you have specified.

13. Press the EDIT key and then press the SEQ key. This calls the initial sequence menu to your monitor screen as shown in Figure 3-87.

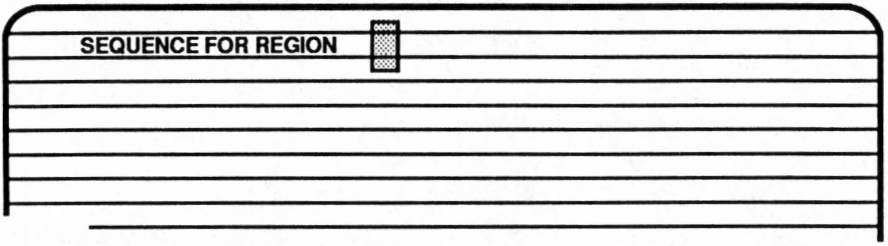


Figure 3-87. Initial Sequence Menu.

14. Type the region number **3** at the blinking cursor position, as this is the region you want the SET PAGE changes in. Then press <ENTER> This brings the rest of the sequence menu to your monitor screen.

15. The cursor will be positioned under the START PAGE column in the last position of the FILE 1 number. Type **29** at this position. This selects the SpectraGen memory starting page number for region 3, file 1. Press <ENTER> to move the cursor to the STOP PAGE column. Type **33** at this position. This selects the SpectraGen memory ending page for region 3, file 1. Press <ENTER> to move the cursor to the CHANGE FILE column. Type a **1** at this position. This displays 1 page and then moves to the next file.

16. Your sequence menu should look like Figure 3-88. Press the <ENTER> key repeatedly to store this sequence and to exit the menu.

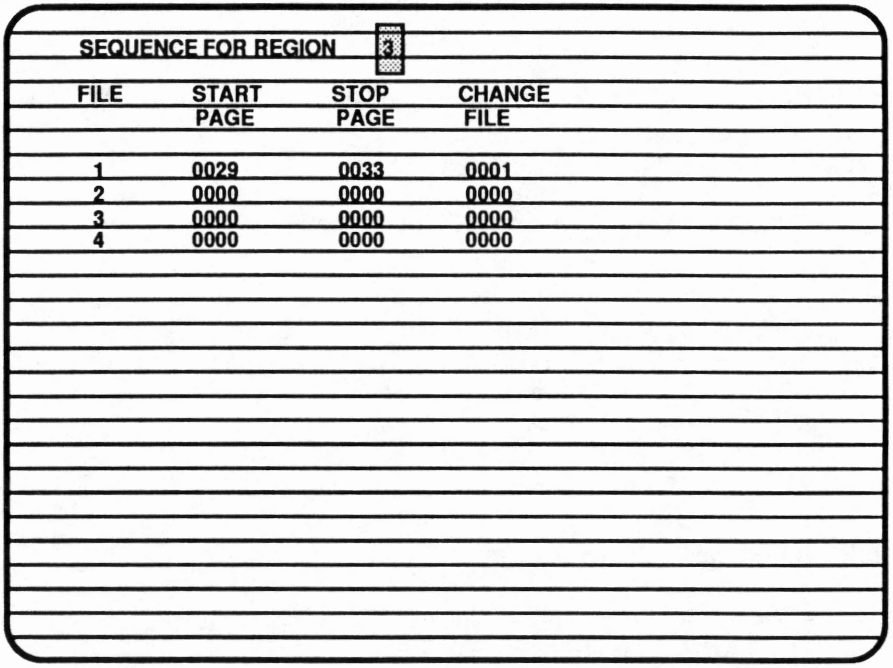


Figure 3-88. Sequence Menu for Region 3.

17. Your SpectraGen will return to the EDIT Mode at the next page.

18. Press the RESUME DISPLY key to enter the display mode and watch your messages on the monitor screen to verify that they are being displayed the way you want them displayed.

SET WEATHR (Set Weather)

Sets the beginning screen readings of the optional local weather instruments and selects a memory page to accept and store the readings collected by the instruments. You may enter preset numbers for your display. Weather sensors will update.

NOTE *By typing "X's" in the sensor reading area it will remove that reading from the display.*

SPACEBAR (1/2, 3/4, 7/8)

Used by itself, the SPACEBAR advances the cursor one whole space while erasing the character in that space. When the SPACEBAR is tapped withe the CTRL key held down, the cursor advances only 1/2 space. Used in the same manner as the CTRL key, the SHIFT key advances the cursor 3/4 space, and the ALT key advances the cursor 7/8 space. This is useful in spacing letters on the text screen.

SYSTEM

Enables a stand-alone keyboard to individually access multiple SpectraGens. This feature eliminates the need for a separate keyboard with each remote unite.

A group of SpectraGens using SYSTEM control must have the controlling keyboard connected by direct wires or modems to the keyboard ports of the remote SpectraGens. In addition, the operator must be able to see the remote video signals.

To connect a stand-alone or built-in keyboard to a remote SpectraGen, press the SYSTEM key, then type the channel name of the desired remote unit. If you type a wrong name, press the SYSTEM key again, then type the correct name. To give it a channel name, you fill out its SET CHAN menu. (Refer to Page 3-17 for procedures.)

VIDEO

NOTE *Non-functional unless a video source is present at the external video input.*

Alone, the VIDEO key inserts a hidden character before and after the word or phrase to be marked for the video window.

By pressing the SHIFT and VIDEO keys, you get an external video window for the whole line.

By pressing the ALT and Video keys, the page background color is replaced with whatever image an external video source supplies to the SpectraGen EXT VID (EXTERNAL VIDEO) connector. The text will appear superimposed on the external video image.

EXTRN DATA (External Data)

EXTRN DATA assigns a block of memory pages to external data services such as news and NOAA weather. The block then accepts and stores the information until the SpectraGen displays it.

The NOAA Weatherwire Service is supplied by the National Weather Service. The NOAA wire transmits weather forecasts, storm warnings, flood forecasts, earthquake alerts, and other environmental information in plain language. Each forecast or warning is preceded by a code that identifies its geographical region. Contact your local National Weather Service office for a list of these codes and further information about the NOAA Weatherwire Service.

The SpectraGen's NOAA software checks all the NOAA geographical category codes and stores only the requested information for your local area.

The NOAA software uses the page memory as a buffer storage area. The incoming forecasts for each code group are stored in separate blocks of pages in the page memory. The previous message for a given region is erased whenever a new message is received. The forecasts are

read out of the page memory and displayed according to the sequence menu for the NOAA region.

To display the NOAA Weatherwire adhere to the following procedures:

1. Determine how many memory pages will be needed for NOAA weather reports. Per the table below, you should reserve three pages for each code group.

NUMBER OF CODE GROUPS	PAGE QUANTITY
1	3
2	6
3	9
4	12
5	15
6	18
7	21
8	24

2. Press the EDIT key to put the unit in the EDIT Mode. Press the SET CHAN key to display the Set Channel menu on the screen. (Refer to the instructions previously described on pages 3-18 and 3-19 to perform SET CHAN.)

3. Press the EDIT key again and then press the EXTRN DATA key, and the screen will appear as shown in Figure 3-89.

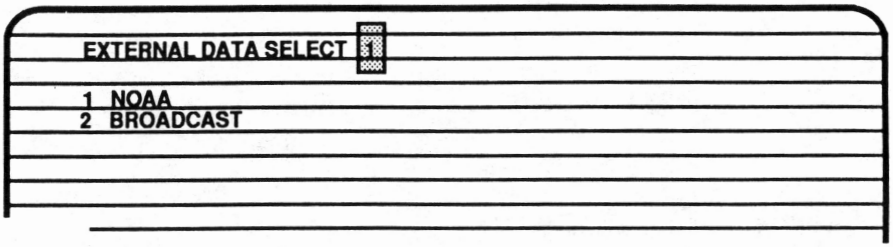


Figure 3-89. External Data Menu Display.

4. On the External Data Select line, press "1", and the NOAA menu will appear as shown in Figure 3-90.

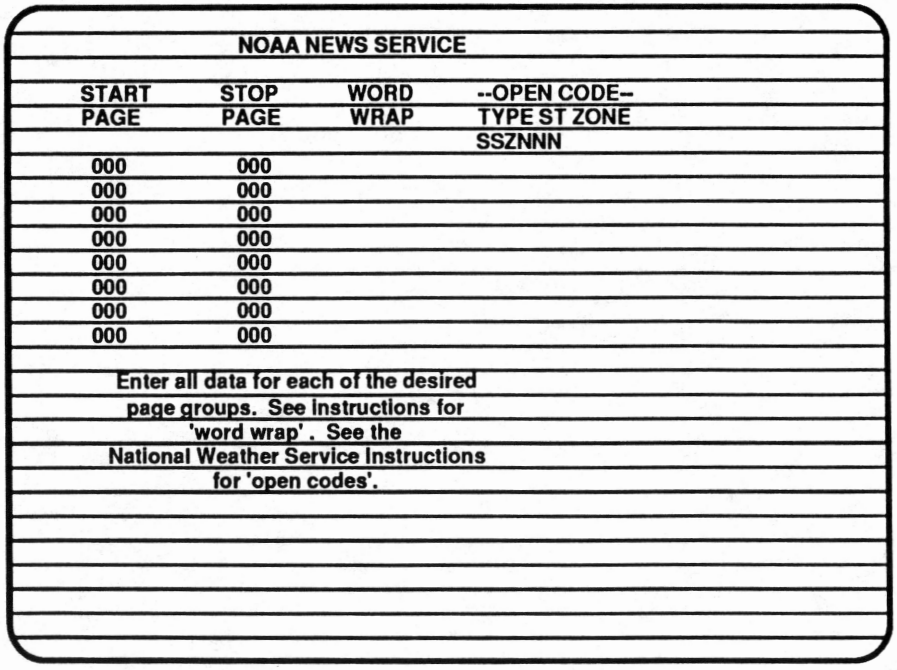


Figure 3-90. NOAA Menu Request Display.

a. The START-STOP PAGE identifies the first and last pages of an inclusive block of pages for a particular geographical region. Each region requires three linked pages.

b. WORD WRAP pulls all of a word that is too long to fit on one line onto the next line. Enter YES to display NOAA as complete pages. Enter NO to display it as a crawl. YES adds blanks to the end of each line in memory so words are not broken on the screen. NO stores text with no end-of-line blanks to eliminate gaps between crawling words.

NOTE *WORD WRAP is used when displaying NOAA pages other than when using the crawl line.*

c. OPEN CODE is where you enter the NOAA (up to 6-characters) codes for your geographical regions. Call the National Weather Service for this information.

5. As shown in Figure 3-91, enter the START-STOP pages, WORD WRAP and OPEN CODE data. This will display three NOAA region forecasts as nine sequential pages. Press the <ENTER> key repeatedly to store this and to exit the menu.

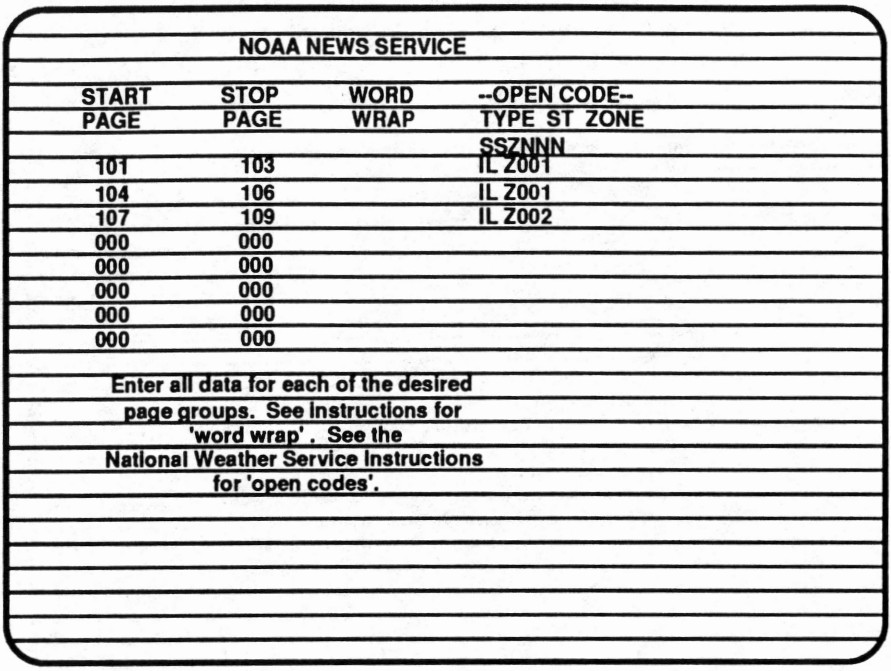


Figure 3-91. NOAA Menu Display.

6. To determine NOAA attributes, call a NOAA page into the edit buffer and change its attributes to meet your requirements. (Refer to DISPLY ATTRIB starting on page 3-70 for procedures.)

7. Then use the SET PAGES key to copy this page into all the other NOAA pages. (Refer to SET PAGES starting on page 3-108 for procedures.)

8. Press the EDIT key and then press the SEQ key which will call the initial sequence menu to your monitor. Fill out the sequence menus that displays the NOAA pages in the NOAA region. (Refer to the SEQ procedures starting on page 3-37.)

9. As an example, the following sequence menu shown in Figure 3-92 will display three NOAA region forecasts as nine sequential pages in screen region 3. Because the attributes of these pages have been set to full-page display, WORD WRAP has been set to "Y".

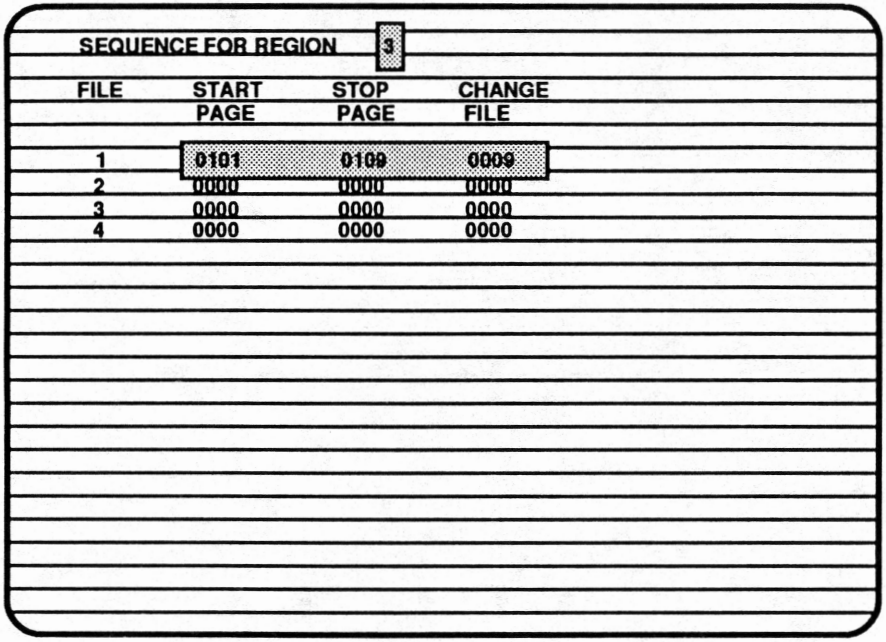


Figure 3-92. Typical Sequence Region 3 Display.

Chapter 4
Keyboard Key Description

INTRODUCTION

The SpectraGen keyboard consists of an extended computer keyboard with several sets of keys that you can use to control and program the system. Refer to Figure FO-1 in Appendix A.

Multi-Mode Keys (ALT, CTRL & SHIFT)

Many of the control keys perform function in two or more modes. The modes of a key are distinguished by the colors of the engraved legends. To select a given mode, press and hold down the appropriate **Function Mode-Select** key (**ALT, CTRL** or **SHIFT**) if needed, then tap the desired function key.

Key commands shown in **Blue** denote key modes activated when the **ALT** key is pressed while the desired function key is tapped. Those commands shown in **Green** are activated when the **SHIFT** key is pressed while the desired function key is tapped. The **CTRL** key activates the function key in **Red** when used in the same manner as the **ALT** and **SHIFT** keys.

Color Set Keys

These keys color the character faces, outlines, shadows, and background of a line (or page) of text. Each key (with or without the use of the ALT and COLOR keys) selects several palettes from which to choose.

Keys Affecting the Entire Keyboard

CURSOR INHIBIT (CURSOR INHIBT). This key does not stop cursor movement but hides the cursor from screen display. The **ALT** key must be pressed in conjunction with the **CURSOR INHIBIT** key to activate or deactivate cursor appearance.

CAPS LOCK. Use this key when placing text in all upper-case letters. This frees the **SHIFT** key for alternate mode usage in the function keys. (CAPS LOCK indicator light will come ON.)

ESCAPE (ESC). Used in Customer Menu Options.

KEYBOARD LOCK (KEYBRD LOCK). This key disables all other keys. Press **ALT** down while tapping **KEYBRD LOCK** to disable the keyboard, then press **ALT** and **KEYBRD LOCK** again to enable the keyboard. Lock the keyboard when you resume display operation to keep taps and bumps from changing the display. (KEYBRD LOCK indicator lights will flash.)

TAB. May be used during EDIT to advance five spaces. Back tab (SHIFT + TAB) is also used to go backward five spaces.

Line / Page Keys

On keys in which **LINE** (green) or **PAGE** (Blue) appears, use of the respective **SHIFT** or **ALT** key will activate the associated command for the **LINE** in which the cursor appears or for the entire **PAGE**.

On keys in which **PAGE** (blue) is shown with only a **black** lettered function, the key's basic (default) function is for the **LINE** in which the cursor appears. The **ALT** key, pressed with the function key, activates the function for the entire page.

Function Key Definitions

These definitions are arranged alphabetically. The command designations have references and considerations for the **ALT**, **CTRL** and **SHIFT** alternate function mode keys. Keys and functions which have replaced earlier model keyboards and functions will be noted.

(ARROW) LINE/PAGE. In usage by themselves, the four arrow keys will move the cursor up, down, left or right one space each time the key is tapped. With the **ALT** or **SHIFT** key, the entire page is moved.

ACCESS CODES. This key provides restricted access to specified pages or menus from remote users.

ALT FONT. Inserts a hidden character in the space before and after a word or phrase, providing a different font face for that lines main font.

ALTERNATE (ALT). Switches to BLUE legend function keys.

ATTRIB RESET. Using **ALT** with **Disply Attrib** resets the attributes of the page in the edit buffer to these default settings: White Characters, Double-width, Double height, Non-edged Characters; Blue Background; Medium Splash; 15-Second Display; No Page-Link-Wait; and No Display Windows.

BACK SPACE. This key erases the character or space preceding the cursor position and moves the cursor back one space for each tap of the key.

BATCH TRANSFER (BATCH TRANS). Sends all menus / pages or a subset of pages from one unit to another. With **BATCH TRANS**, a menu / page set can be designed locally, then sent to a remote unit. **BATCH TRANS** also lets restricted-access users change certain pages.

BLOCK EDIT. Allows a multi-page block of text to be edited without regard for page boundaries. **BLOCK EDIT** automatically re-distributes the rest of the text block across the off-screen pages as you add or subtract entries to / from the screen edit pages.

BORDER. Adds an encompassing border to all characters on a line (or page when used with the **ALT** key). The text may have border, hollow characters, or border with black characters. (Cycle repeat.)

BREAK. Disconnects the **BATCH TRANS, REMOTE EDIT**, or **KEYBRD DIRECT** data connection with another unit. **BREAK** allows **BATCH TRANS** to finish sending an in-process page or menu, but stops any further transmissions. **BREAK** interrupts **REMOTE EDIT** and **KEYBRD DIRECT** immediately.

CENTER LINE (Ctr Ln). When the SHIFT key is held down and tapping the Ctr Ln key will center the text on the LINE in which the cursor appears.

CENTER PAGE (Ctr Pg). When the **ALT** key is held down and tapping the Ctr Pg key will center all the text on the PAGE in which the cursor appears.

COLOR. The **COLOR** key allows the user to specify whether a chosen color is to be used for a word, phrase, line or for the entire page. By itself, the **COLOR** key gives a word, phrase, or line segment an alternate background and character color combination by inserting hidden control characters in the spaces before and after the word/ phrase. It reverts to the original color scheme by pressing the **SPACE BAR** while the cursor is over the hidden character. By pressing and holding **SHIFT** then tapping the **COLOR** key, a color palette can be set for a **LINE** of characters. By pressing and holding **ALT** then tapping the **COLOR** key, a color palette can be set for a **PAGE.**

CONTROL (CTRL). Switches to RED ledger function keys.

DELETE. Without pressing any alternate function key, this key will delete the character behind by the cursor and shift the remaining line left. When **SHIFT** is pressed with **DELETE**, the LINE of text in which the cursor appears is deleted the rest of the page moves up. When **ALT** is pressed with **DELETE**, the rest of the page moves to the left one character.

DISPLAY ATTRIBUTES (DISPLY ATTRIB). Displays the page attributes menu of the page in the edit buffer. Each page has an individual menu that controls the following attributes: 1. Display Type, Speed and Time; 2. Page, Skip, Link and Wait; 3. Display Time Window; and 4. Line Levels (for control of external equipment). (See page 3-68.)

EDGE. Adds a right-hand shadow to all the characters on the line with the cursor. Used with the **ALT** key, a right-hand shadow is added to all the characters on a PAGE. Press repeatedly to select no edging or one of three edging widths. (Cycle repeat.)

EDIT. Places the unit in the edit mode so that menus and pages may be setup, created or modified. In the EDIT mode, display operation stops and the screen displays the contents of the edit buffer. See the **RESUME** key description.

END. Places the cursor at the end of the next line.

ENTER. Directs the unit to accept data that you just typed into a menu and to move to the next menu data point or, when in a text screen, **ENTER** moves the cursor to the beginning of the next available line. On the last data point in a menu, **ENTER** stores the menu.

ERASE. By itself, this key will erase the line of text on which the cursor appears. Tapped with the **ALT** key held down, this key will cause an entire page of text to be erased.

ERASE TO END. Alone, this key will erase text from the cursor position to the end of the line. Tapped with the **ALT** key held down, this key will erase text from the cursor position to the end of the PAGE.

EVENT. At a specific time, prompts the unit to either:

1. Replace any sequence file with a new file, or insert a one-time page sequence into, but not instead of, the sequence currently running, or sends control signals to other equipment.

2. Controls external devices. (Includes PB-1 and CSS-MINI.)

3. Initiates a Batch Transfer.

When used with the **SHIFT** key, this key replaces the current on-screen event menu with the menu for the next higher-numbered event. When used with the **ALT** key, this key replaces the current on-screen event menu with the menu for the previous lower-numbered event.

EXTERNAL DATA (EXTRN DATA). Provides selection of external data services such as news, stock crawl, and NOAA weather.

FLASH. Makes text flash by inserting a hidden control character in the space before and after a word, or words. A single flash character will make the rest of the line flash. Erase the flash character by pressing the **SPACE BAR** while the cursor is over the hidden character.

FONT. This key alone selects the FONT for a word or phrase. The line of text on which the cursor appears may have the font changed when used with the **SHIFT** key. When this key is tapped while the **ALT** key is held down, the font is then changed for the entire page.

GRAPH. Converts the character keys of the keyboard from letters to mosaic symbols. Graphic symbols let you draw simple pictures and makes lines for tables. See Graphic Character Appendix B.

HEIGHT. Tapped by itself, this key will change the height of characters on the line in which the cursor appears. Tapped with the **ALT** key, the height of all characters on the page will change in sequence with the number of taps (rotating through 8 character heights). Tapped with the CTRL key reverses the order.

HOME. Returns the cursor to the upper left corner of the screen page.

INSERT. When used by itself, one character space is inserted where the cursor appears, and the rest of the line is shifted to the right. If the **SHIFT** key is pressed at the same time, a blank LINE will be inserted on the line in which the cursor appears. If the **ALT** key is pressed at the same time, a space is inserted moving the rest of the page to the right.

KEYBOARD DIRECT. Allows a local unit to directly access the menus and pages of a remote unit. The video display may only be seen from the remote unit. See REMOTE EDIT.

LINE LEVEL. The line level settings control four TTL logic outputs and two TTL logic inputs.

LINE SEPARATION (LINE SEP). This key places a thin line under an entire line of text. Place the cursor on the line in which the separator should appear, then press LINE SEP to draw the line. Press again to remove the line. When used with the **ALT** key, all functions are page globule. When used with the **SHIFT** key, a line will appear over the line of text in which the cursor appears. When used with the **CTRL** key, the line separator color will change.

ON/OFF LINE. While in the Title Mode, this key switches Video Out between the text overlay and no text overlay when External Video is present.

PAGE COPY. Copies a block of pages from a specified location in page memory into another specified location in page memory.

NEXT PAGE. If another page is available after the current page, then this key will bring that page to the screen.

LAST PAGE. If a preceding page is available before the current page, then this key will bring that page to the screen.

RECALL. Copies a requested page from page memory into the edit buffer. To operate, press **RECALL**, type the number of the page wanted, then press ENTER. The new page will replace the previous page in the edit buffer.

REMOTE EDIT. Gives a local unit the ability to recall menus and pages from a remote unit. These menus and pages are edited in the local edit buffer. The remote unit continues automatic operation during remote editing. Menus are in red to let you know you are in remote operation.

RESUME. Takes the system out of edit mode and returns the system to automatic operation. It is strongly suggested that the KEYBRD LOCK be activated after resuming automatic operation so that accidental bumps and taps won't interrupt the screen display.

REVERSE VIDEO (REV VIDEO). Swaps the background and character colors of a word, phrase, or line segment by inserting hidden control characters in the spaces before and after the word or phrase. Erase with the **SPACE BAR.**

SEQUENCE (SEQ). This key establishes and displays an independent repeating sequence of pages for each screen region. The screen can be divided into six separate regions. Each independently programmable region requires a separate sequence menu. The sequence menu sets up a unique order of pages that repeats over and over until the menu is changed.

SET CHANNEL (SET CHAN). Names the SpectraGen (channel), divides its screen into regions, and shows the number of events and pages.

SET CLOCK. Sets the SpectraGen's internal clock to the date and time of day and loads the clock's display into a memory page. Once set, the clock will keep time continuously.

SET PAGES. Copies the attributes and text of the page from the edit buffer (on screen) to selected pages in the page memory.

SET WEATHER (SET WEATHR). Sets the beginning screen readings of the optional local weather instruments and selects a memory page to accept and store the readings collected by the instruments.

SHIFT. The **SHIFT** key performs two functions:

1. Switches to GREEN legend function modes, and

2. Makes a single character upper-case. Use CAPS LOCK to make all the characters upper-case.

SPACE BAR (1/2, 3/4, 7/8) Used by itself, the **SPACE BAR** advances the cursor one whole space. When the **SPACE BAR** is tapped with the **CTRL** key held down, the cursor advances only 1/2 space. Used in the same manner as the **CTRL** key, the **SHIFT** key advances the cursor a 3/4 space, and the **ALT** key advances the cursor a 7/8 space. This is useful in spacing letters and words on the text screen.

STORE. Copies the page in the edit buffer to a designated location in the page memory. To use, press **STORE** then press ENTER. A screen will appear telling you that the page is stored. Pressing ENTER again will return you to the page. The copy of the page in the edit buffer will not be erased.

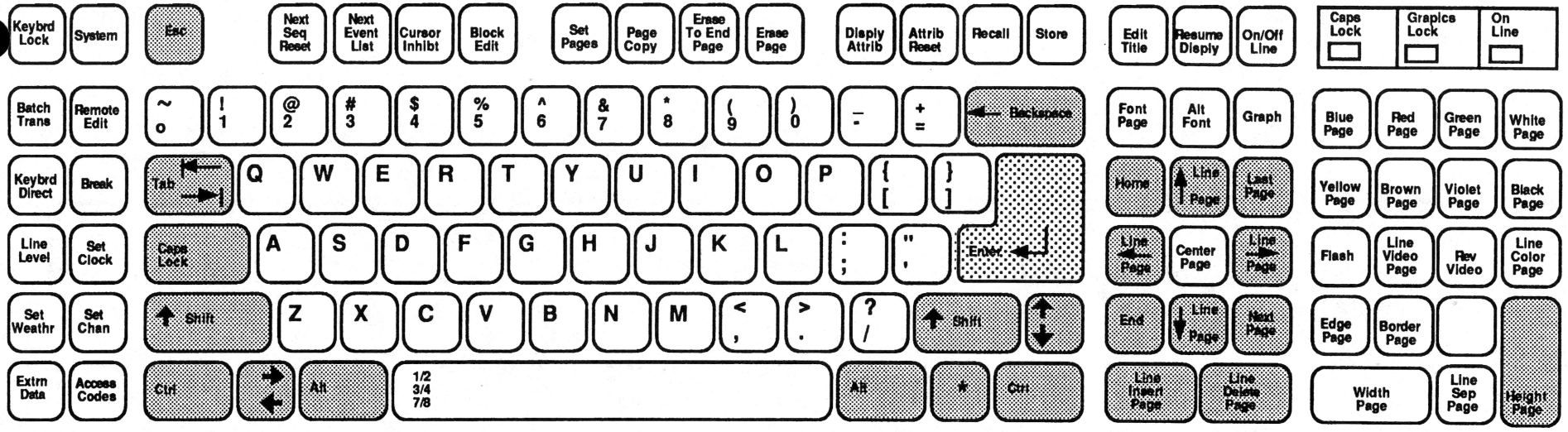
SYSTEM. Enables a stand-alone keyboard to individually access and control remote SpectraGen's. This feature eliminates the need for a separate keyboard with each remote unit.

VIDEO. Alone, the **VIDEO** key inserts a hidden character before and after the word or phrase to be marked for the video window. By pressing the **SHIFT** and **VIDEO** keys, a window is generated on the line by inserting a hidden external video character in the space before, and after the part of the window on each line to be masked. By pressing the **ALT** and **VIDEO** keys, the page background color is replaced with whatever image an external video source supplies to the SpectraGen **EXT VID (EXTERNAL VIDEO)** connector. The text will appear superimposed on the external video image.

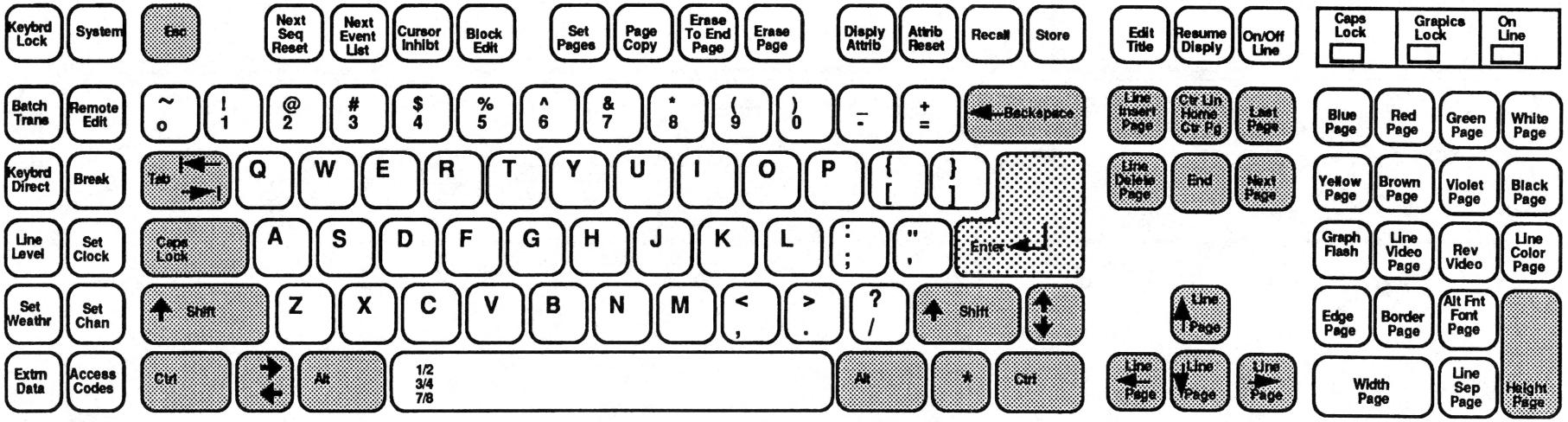
WIDTH. Press repeatedly to rotate through the eight (8) different character widths affecting the line. When the **ALT** key is pressed and held down while the **WIDTH** key is pressed, the character width is affected on the entire page.

- NOTE -

Appendix A
Foldout Illustrations

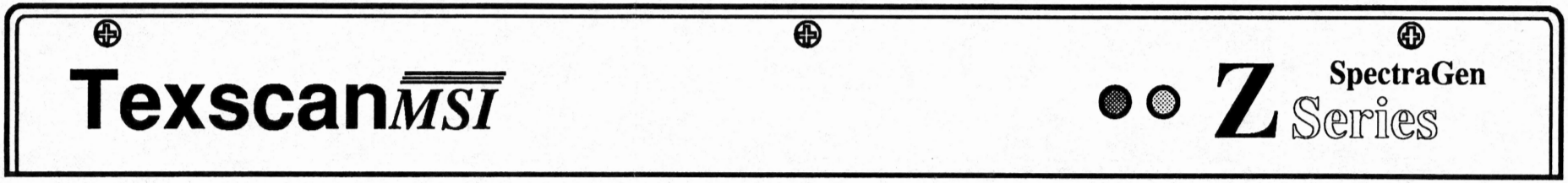


Northgate Ultra-F Keyboard

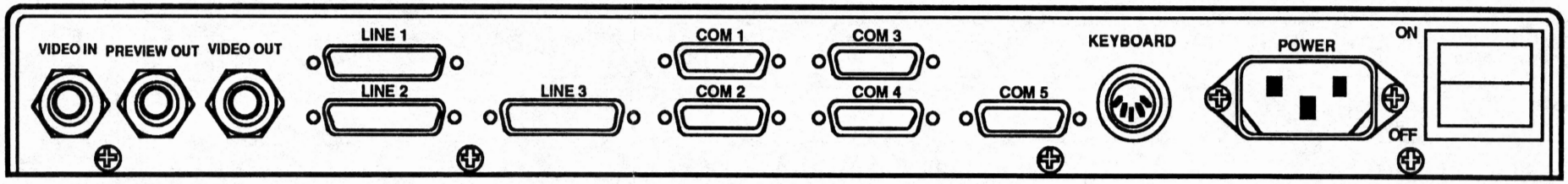


Northgate Ultra-T Keyboard

Figure FO-1. SpectraGen Z-Series™ Keyboard Layout.



FRONT PANEL



REAR PANEL

Figure FO-2. SpectraGen Z-Series™ Front and Rear Panels.

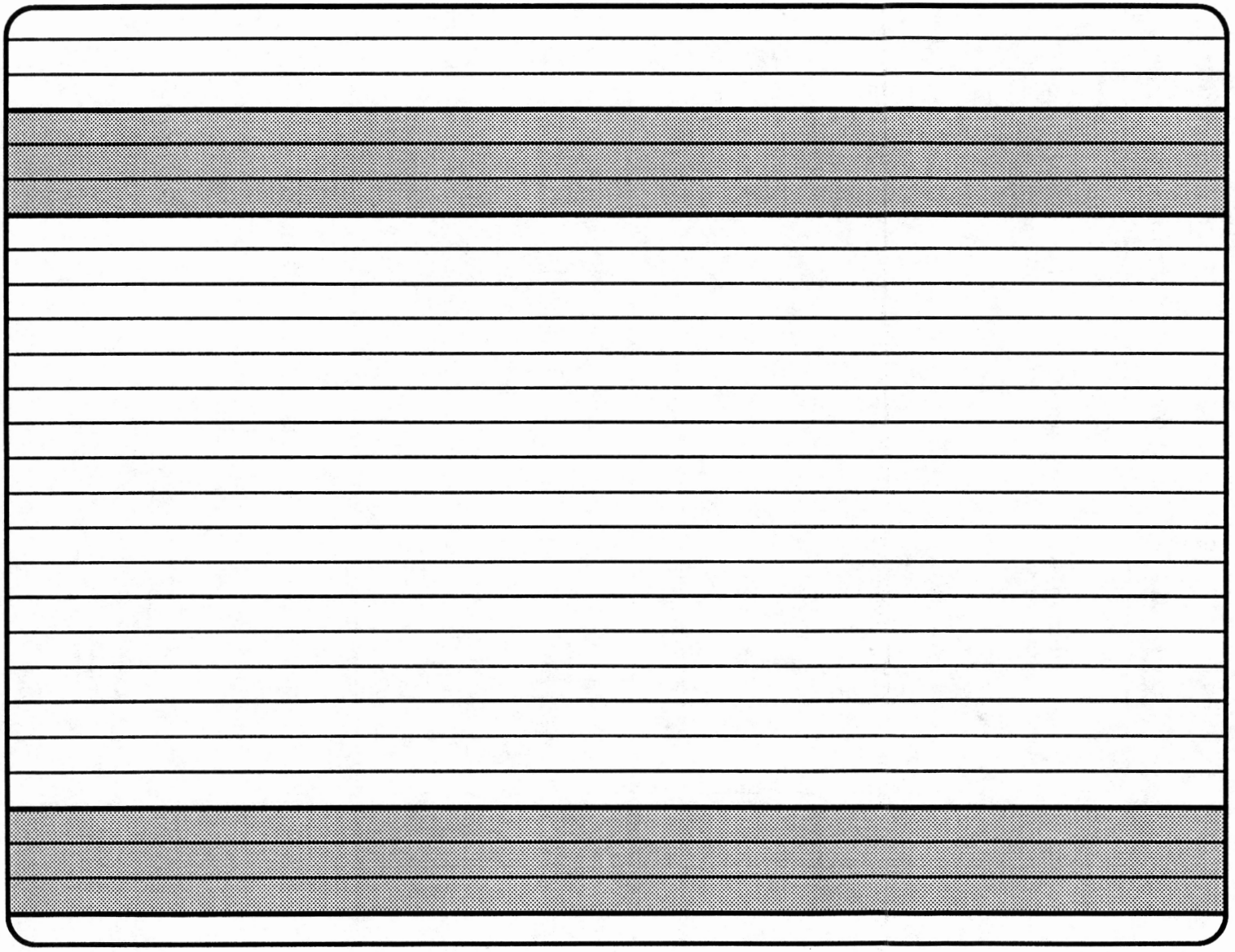


Figure FO-3. Region Programming Worksheet.

Texscan MSI SpectraGen Z-Series™ Quick Reference Guide

SpectraGen Factory Default - Screen Region Set-up

TITLES	REGION 1	TITLE REGION	PAGES 0 - 1
SUN JAN 1, 1993 TIME	REGION 2	CLOCK REGION	PAGE 2
MAIN BODY TEXT SPLASH ROLL	REGION 3	TEXT REGION	PAGES 21 - 25 PAGES 11 - 20
KEYBOARD CRAWL TEXT	REGION 4	CRAWL REGION	PAGES 3 - 10

Figure FO-4. Quick Reference Guide. (Front Side)

FUNCTION	OPERATION
POWER UP	When you first turn on the SpectraGen power the screen shown above should be displayed. When the keyboard is locked the keyboard lights (CAPS LOCK, GRAPHICS LOCK, and ON LINE), randomly flash on and off. To unlock your keyboard - hold down Alt and press Keybd Lock. To change the Caps Lock status, press Caps Lock. The above screen may also be displayed by pressing Resume Disply.
REGION 1 TITLES PAGE 1 **CENTER TEXT** **STORE A PAGE**	1. To enter the EDIT mode, press Edit Title. 2. Press Recall, type page number **"0 or 1"**, then press Enter. 3. Type the Title you want, Hotel name, Event, and etc. To center your title press Center Page. 4. When complete, press Store, and then press Enter.
REGION 2 **CLOCK** PAGE 2	1. To set your SpectraGen clock/calendar, press Set Clock. This brings up the set clock menu. 2. Press 1/2 3/4 7/8, to increment the entry. Hold Ctrl key down and press Space Bar 1/2 3/4 7/8 to decrement. Press Enter to go to the next entry. 3. When the set clock/calendar entries are complete, enter through the screen; they will be saved automatically.
	1. Press Recall, type page **"21 or thru 25"**, then press Enter. The main body text is from page 21 to 25. Type the desired text. You can type several lines of text with word wrap. If you want to end a line before wrap press Enter. You can display only 8 lines of text per page. 2. Use ← Back space to erase characters. 3. The character size can be changed by holding down Alt and pressing Height Page and Width Page. There are only 8 lines of text per page. When you press Height Page 1 time you use 2 lines of display, pressing 2 times uses 3 lines, and etc.

FUNCTION	OPERATION
CHANGE LINE COLOR **CHANGE PAGE COLOR** **STORE PAGE**	4. Press one of the color keys. For example, press [Red Page]. Notice the line background color changed Try the other color keys and see the results. 5. Hold down [Alt], and then press a color key. For example press [Red Page]. Notice the background color for the whole page changed. Try other color keys and see the results. 6. To store a page in SpectraGen memory, press [Store], then press [Enter]. Press [Next Page] to advance to the next page, or [Last Page] to return to the previous page.
REGION 4 KEYBOARD CRAWL PAGES 3 - 10	1. Press [Recall], type in the desired page number (**3-10**), then press [Enter]. Type the desired text you wish to appear as a crawl across the screen. Do Not increase the character heights more than the size of the region. 2. To store a page in SpectraGen memory, press [Store], then press [Enter].
	1. Next, you must sequence the pages for each region. Press [Next Seq Reset]. Type in the number '**1**" and press [Enter]. This brings up the region 1 sequence menu. 2. Type "**0** or **1**" for START PAGE, and press [Enter]; type "**0** or **1**" for STOP PAGE, and press [Enter]. 3. Type "**1**" for FILE CHANGE, and press [Enter]. Continue pressing [Enter] until you exit the menu. Repeat for REGIONS 2, 3 snf 4 using correct START and STOP page numbers. **NOTE** For now enter the number "**1**' for all CHANGE FILE entries. For more information, refer to the SpectraGen Manual.
	1. Press [Resume Disply] key, this puts the SpectraGen into the display mode. Your text information will be displayed as set up in the sequence menu. Each page will display for 15 seconds. To change the display time, refer to the SpectraGen Manual.

Figure FO-4. Quick Reference Guide. (Back Side)

Refer to the SpectraGen Z-Series Operation Manual for further assistance.

NOTE: Pressing <ENTER> thru the menu saves changes to the menu.

The above Z-Series sequence will guide you through setting-up the four regions typically used in SpectraGen applications.

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Appendix B
Graphic Characters

Introduction

The purpose of the **GRAPH** key is to convert the character keys of the keyboard from letters to graphic symbols. Graphic symbols lets you draw simple pictures, make lines for tables, adds highlights to the text, and adds graphic interest to your display. You can mix graphics with text on any line of a page. You can give pages with graphics any text animation (page print, crawl, flash, roll, or bang). You can give graphic symbols any height and width on any lines with the HEIGHT, WIDTH, and LINE/PAGE keys.

Figure B-1 is a display of the graphic symbols each key generates in the GRAPH mode. Figures B-2, B-3, B-4, and B-5 are example graphics using the GRAPH key, and instructions on how to assemble each graph.

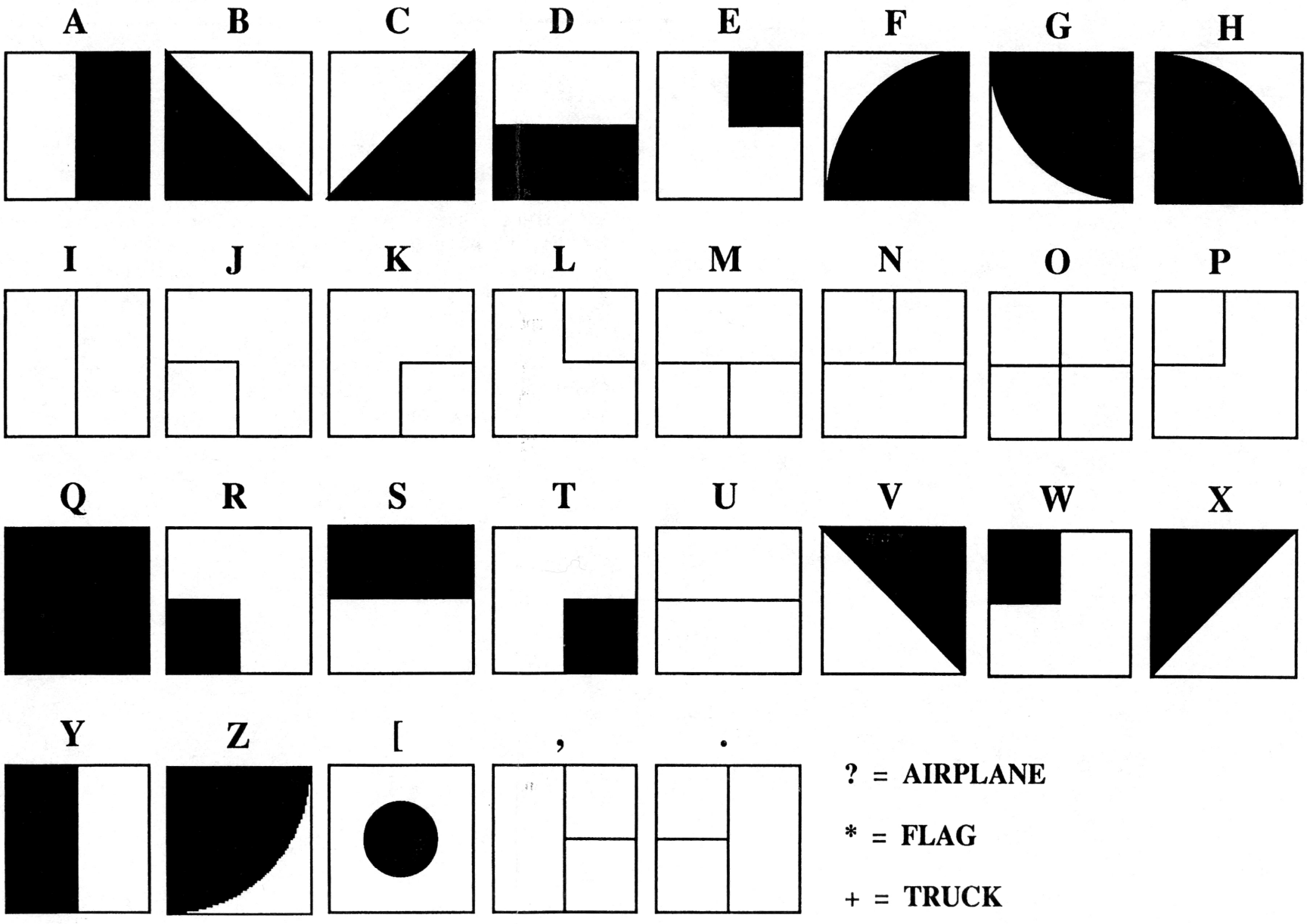

Figure B-1. Graphic Symbols.

College Football Graph

1. Call up a blank page.
2. Set character size to double height and single width.
3. Press the GRAPH key for graphic mode.
4. Press the HOME key, then press <ENTER>.
5. Type the following sequence for spaces and keys:

   LINE 1: (4) spaces, (1) F, (1) Q, (1) space, (1) Q, (1) space, (1) Q, (1) space, (1) Q, (1) H, <ENTER>.

   LINE 2: (4) spaces, (1) Q, (2) spaces, Press GRAPH key, (1) period, (1) space, (1) period, Press GRAPH key, (2) spaces, (1) Q <ENTER>.

   LINE 3: (4) spaces, (1) G, (2) spaces, (3) U's, (2) spaces, (1) Z, <ENTER>.

   LINE 4: (6) spaces, (1) L, (3) U's, (1) P.

6. Select desired PAGE COLOR.
7. Press GRAPH key to be in text mode. Position the cursor to the desired area and type text.

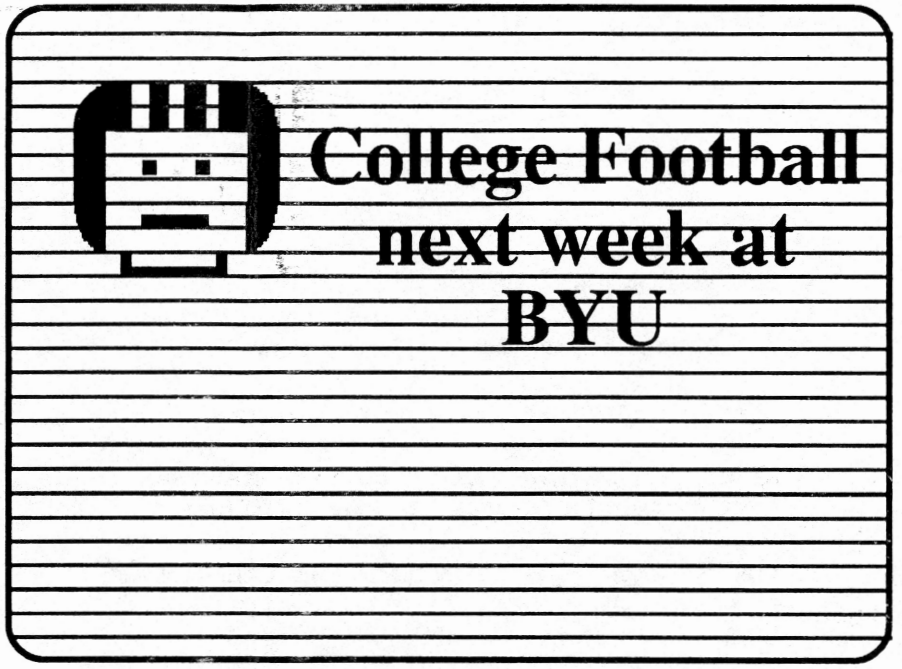

Figure B-2. Football Graph Display.

1st Graph

1. Call up a blank page.
2. Set character size to double height and single width.
3. Press the GRAPH key for graphic mode.
4. Press the HOME key, then press <ENTER>.
5. Type the following sequence for spaces and keys:

   LINE 1: (3) spaces, (8) Q's, (5) spaces, (6) spaces, <ENTER>.

   LINE 2: (3) spaces, (8) Q's, (7) spaces, Press GRAPH key, (1) space, (1) T, Press GRAPH key, <ENTER>.

   LINE 3: (5) spaces, (6) Q's, (5) spaces, (6) D's, <ENTER>.

   LINE 4: (5) spaces, (6) Q's, <ENTER>.

   LINE 5: (5) spaces, (6) Q's, <ENTER>.

   LINE 6: (5) spaces, (6) Q's, <ENTER>.

   LINE 7: (3) spaces, (10) Q's, <ENTER>.

   LINE 8: (3) spaces, (10) Q's, <ENTER>.

6. Select desired PAGE COLOR.
7. Press GRAPH key to be in text mode. Position the cursor to the desired area and type text.

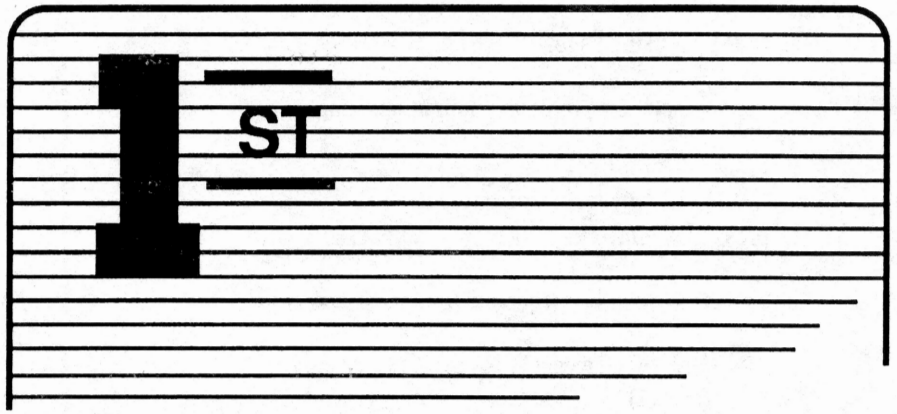

Figure B-3. 1st Graph Display.

Salt Lake Paint

1. Call up a blank page.
2. Set character size to double height and single width.
3. Press the GRAPH key for graphic mode.
4. Press the HOME key, then press <ENTER>.
5. Type the following sequence for spaces and keys.

   LINE 1: (3) spaces, (2) Q's, <ENTER>.

   LINE 2: (2) spaces, (1) C, (8) Q's, (1) B, <ENTER>.

   LINE 3: (1) space, (1) C, (10) Q's, (1) B, <ENTER>.

   LINE 4: (1) C, (12) Q's, (1) B, <ENTER>.

   LINE 5: (1) space, (1) Q, (2) spaces, (1) Q, (2) spaces, (1) Q, <ENTER>.

   LINE 6: (1) space, (1) Q, (2) spaces, (1) Q, (2) spaces, (1) Q, (23) D's, <ENTER>.

   LINE 7: (1) space, (1) Q, (2) spaces, (1) Q, (26) D's, <ENTER>.

   LINE 8: (1) space, (1) Q, (29) D's.

6. Select desired PAGE COLOR.
7. Press GRAPH key to be in text mode. Position the cursor to the desired area and type text.

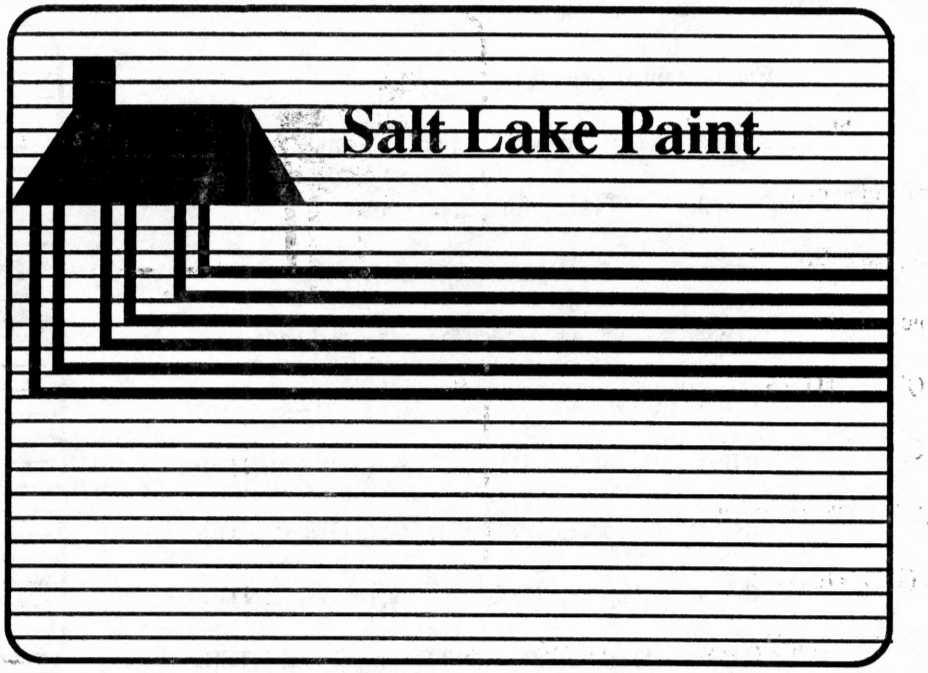

Figure B-4. Salt Lake Paint Display.

Pine Tree

1. Call up a blank page.
2. Set character size to double height and single width.
3. Press the GRAPH key for graphic mode.
4. Press the HOME key, then press <ENTER>.
5. Type the following sequence for spaces and keys.

   LINE 1: (5) spaces, (2) C's, (2) B's, <ENTER.

   LINE 2: (4) spaces, (2) C's, (2) Q's, (2) B's, <ENTER>.

   LINE 3: (3) spaces, (2) C's, (4) Q's, (2) B's, <ENTER>.

   LINE 4: (2) spaces, (2) C's, (6) Q's, (2) B's, <ENTER>.

   LINE 5: (1) space, (2) C's, (8) Q's, (2) B's, <ENTER>.

   LINE 6: (2) C's, (10) Q's, (2) B's, <ENTER>.

   LINE 7: (6) spaces, (2) Q's.

6. Select desired PAGE COLOR.
7. Press GRAPH key to be in text mode. Position the cursor to the desired areas and type text.

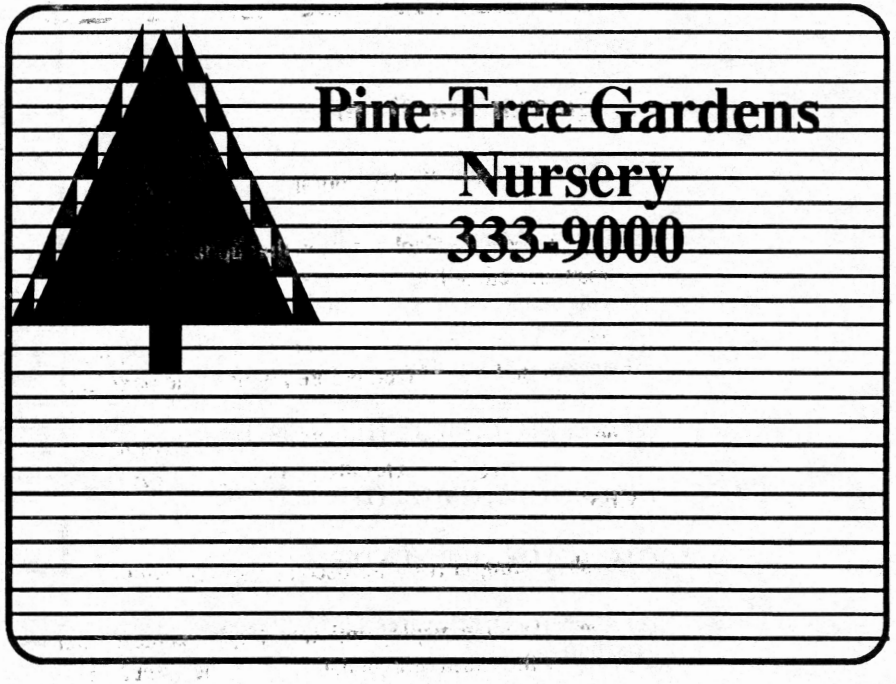

Figure B-5. Pine Tree Gardens Display.

Appendix G
Glossary

Glossary of Terms

Attribute — A user selectable display option.

Bang — A user selectable display option that updates the screen immediately.

Change File — A user specified number showing how many display pages are to be displayed before going to the next file.

Channel Name or Unit ID — The number or letter used to differentiate multiple units for BATCH TRANSFER and SYSTEM ACCESS.

Contact Closure — The shortening of two pins used to start an event.

Crawl — A user selectable display option that updates the screen slowly with information updating from the right and moving to the left on the screen.

Cursor — A blinking square on the screen, indicating the position of the next character entered from the keyboard.

Display Line — The SpectraGen Z-Series™ has 26 display lines which can be assigned to different regions, but there may be more than one display line used to hold a line of text depending on the character height and width used.

Display Mode (Resume Mode) — Normal operating mode of the SpectraGen Z-Series™. All keys are ignored with the exception of the edit key.

DOS — Disk Operating System. Software used with IBM (or compatible IBM) computers.

Edit Buffer — A work screen that displays one page of text or menu for editing purposes into memory.

Edit Mode	The mode of operation where changes can be made to the various screens, regions, menus, etc.
Event	An event is a task that the SpectraGen Z-Series™ performs at a specified time.
Field	An area in a menu that will accept data typed in or selected by the operator.
File	A sequence of consecutive display pages within the SpectraGen Z-Series™.
File, Change File	The change file tells the unit how many pages are to be displayed out of this file before changing to the next display file.
Genlock	This feature allows the SpectraGen to be synced to an external video source.
Hidden Characters	These are unseen characters located before and after a word, phrase or line which allows the text to FLASH, use an ALT FONT, change COLOR, or frame a VIDEO image.
Menu	A list of possible display options.
Page	An area in memory that contains up to 8 display lines of text or graphics. It also contains the display attributes for that page.
Page Print	A display option that displays one line at a time from left to right until the display page is completed.
Palette	A set of colors defined as a combination of background, character face, character outline, and alternate flash character face colors.
Region	A customer area of the display screen for displaying of text.

Roll A display option that has the display roll onto the screen displaying the first line of text at the bottom of the region then rolling one display at a time until the page has filled the region, then pauses for the amount of display time.

Sequence A user defined rotation of pages to be displayed in a particular region.

Sequence File Each region may use up to four files. Each line is a folder for like kind information to be displayed.

Sequence Change File This reflects the quantity of pages displayed in each file. This is also the number of pages to be shown from this file prior to changing to the next file. (At least one page has to be entered.)

Example:

SEQUENCE FOR REGION 3

FILE	START PAGE	STOP PAGE	CHANGE FILE
1	0020	0030	0003
2	0060	0065	0001
3	0095	0100	0002
4	0000	0000	0000

Start Page selects the SpectraGen memory starting page number for region 3, within that file.

Stop Page selects the SpectraGen memory ending page number for region 3, files within that file.

Change File selects the number of pages that will be displayed from that file at a time.

Splash This is a display option that displays each line of text in one continuous motion from the top of the region to the bottom.

Text Line A text line is forty (40) characters on one line.